ORDER NO. VRD9406M119

Service Manual

Video Cassette Recorder

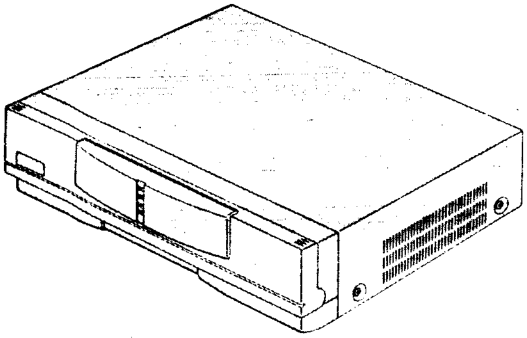
General Description
Adjustment Procedures
Block/Schematic Diagrams
Exploded Views/Parts List

Panasonic S-VHS VHS PAL 625

Hi-Fi HQ

NV-HS1000EG

K-MECHANISM



SPECIFICATIONS

ITEM	SPECIFICATION
POWER	SOURCE: 220 – 240V AC 50/60 Hz
	CONSUMPTION: 41 watts
RECORDING SYSTEM	2 rotary heads, helical scanning system
	PAL
TV TUNER SYSTEM	VHF I: CHN1 ~ CHS10 VHF III: CHE5 ~ CHS41 (PAL/SECAM B) UHF: CH21 ~ CH69 (PAL/SECAM G) 75Ω terminated
RF OUT SYSTEM	UHF: 36 ± 4 (PAL/SECAM G) 70 [illegible] dBμ, 75Ω terminated
VIDEO	HEADS: 4 rotary heads 1 pair for SP recording, playback and trick play (L-R heads) 1 pair for LP recording, playback and trick play (L′-R′ heads) 1 flying erase head
	INPUT: EURO AV (AV1, AV2) Connectors (21 pin) 1.0 Vp-p, 75Ω unbalanced S-VIDEO IN (AV3) Connector Y: 1.0 Vp-p, 75Ω unbalanced C: 0.3 Vp-p, 75Ω unbalanced VIDEO IN (AV3) Connector (Phono type) 1.0 Vp-p, 75Ω unbalanced
	OUTPUT: EURO AV (AV1, AV2) Connectors (21 pin) 1.0 Vp-p, 75Ω unbalanced S-VIDEO OUT Connector Y: 1.0 Vp-p, 75Ω unbalanced C: 0.3 Vp-p, 75Ω unbalanced VIDEO OUT Connector (Phono type) 1.0 Vp-p, 75Ω unbalanced
AUDIO	HEAD: 1 Stationary head (Normal Audio) 2 rotary heads (Hi-Fi 2CH)

ITEM	SPECIFICATION
AUDIO	INPUT: EURO AV (AV1, AV2) Connectors (21 pin) More than –6 dBV (500 mV), More than 10 kΩ AUDIO IN (AV3) Connector (Phono type) More than –10 dBV (316 mV), More than 47 kΩ MICROPHONE JACK –70 dBV
	OUTPUT: EURO AV (AV1, AV2) Connectors (21 pin) –6 dBV (500 mV), Less than 1 kΩ AUDIO OUT Connector (Phono type) –8 dBV (400 mV), Less than 1 kΩ HEADPHONE JACK –30 dBV, 8Ω
	TRACK: 1 track (Normal-mono only) 2 channels (Hi-Fi Sound-Stereo)
TAPE FORMAT	S-VHS, VHS Cassette tape (Tape width 12.7 mm)
TAPE SPEED	SP: 23.39 mm/s (PAL), 33.35 mm/s (NTSC) LP: 11.695 mm/s (PAL), 11.12 mm/s (NTSC) Record/Playback Time: SP: 4 hours with 240 min. type tape LP: 8 hours with 240 min. type tape FF/REW Time: 2.5 min. with 180 min. type tape
DIMENSIONS	430 (W) × 120 (H) × 398 (D) mm
WEIGHT	7.0 kg
STANDARD ACCESSORIES	1 pc. DIN-RF Cable 1 pc. Infra-red Remote Controller 1 pc. Audio Cables 1 pc. AC Mains Lead 1 pc. EDIT 5 pin Cable 1 pc. S-VIDEO 4 P Cable

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

Panasonic

INTRODUCTION

This service manual contains technical information which will allow service personnels to understand and service this model.

Section 1 presents you with technical know how for actual servicing and general information of features and controls, enabling you to become familiar with each function.

Section 2 presents to your mechanical and electrical adjustment information as well disassembly and replacement procedures.

In the case of very common information relating to other models like mechanical adjustments, please refer to the appropriate service manual.

Section 3, 4 contains block diagrams which provides you with information for checking and understanding each circuit. Schematic diagrams which give you detailed information such as waveforms, voltage data, function e.t.c. ...

Section 5 contains exploded views and parts list.

Please place orders using the parts list and not the drawing reference numbers.

If the circuit is changed or modified, this information will be followed by supplementary service manual to be filed with original service manual.

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SECTION 1
GENERAL DESCRIPTIONS

1-1. SERVICE INFORMATION

1-1-1. K-MECHANISM INFORMATION

A. SERVICE POSITION

When servicing the K-Mechanism, the Mechanism can easily be fixed by standing the Mechanism up in the Main Frame as shown below to check easily.

In this position, the following services are possible.

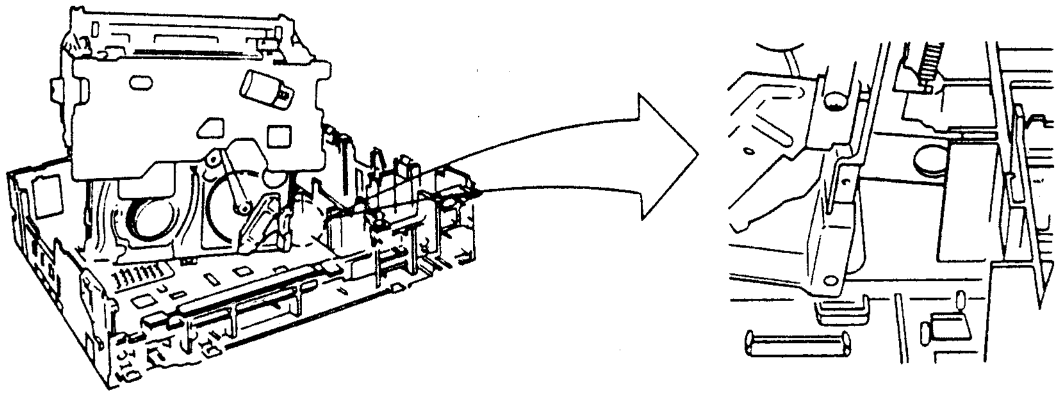


Fig. S1

A-1. CHECKING OF GEAR PHASE ALIGNMENT CONDITION

1) Remove the Mechanism Connection C.B.A.
2) Check gear phase Alignment Condition of Mechanism described on the bottom side of Frame.

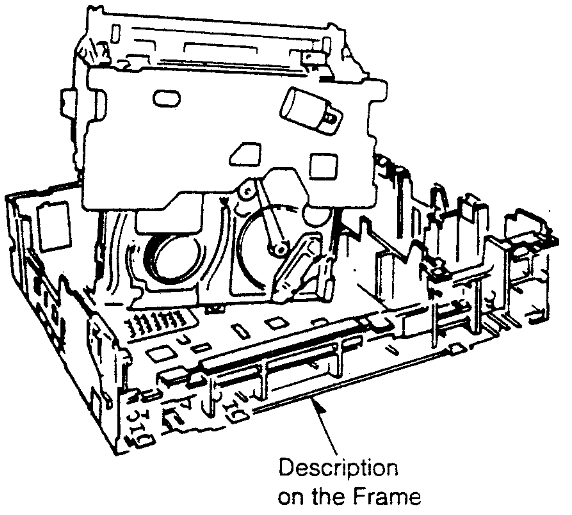


Fig. S2

A-2. CHECKING OF LOADING/UNLOADING OPERATION

There are 3 methods for manual operation of loading/unloading operation as follows.

1. HAND OPERATION
   1) Remove the Mechanism Connection C.B.A.
   2) Turn the Worm Gear or the WORM WHEEL GEAR (Remove the Loading Motor Unit) manually.
2. BATTERY OPERATION
   1) Remove the Mechanism Connection C.B.A.
   2) Connect the Battery (Manganes-Type R6 (AA) 3pcs./+4.5V) to the Loading Motor terminals.
3. SERVICE INFORMATION DISPLAY OPERATION
   1) Set the Service Information Display mode. (Press the "FF", "REW" and "EJECT" buttons simultaneously.)
   2) Press the "FF", "REW" and "EJECT" buttons 7 times to set the Service Mode 7. (The end of display on the Display becomes "--".)
   3) In the above Service Information Display mode, the Loading Motor rotates for Loading operation when the "PLAY" button is pressed. The Loading Motor rotates for unloading operation when the "STOP" button is pressed.

Remark:
Use the "SERVICE INFORMATION DISPLAY" mode for a final check of mechanism movement.

A-3. CHECKING OF REEL GEARS OPERATION

1) Remove the Mechanism Connection C.B.A.
2) Move the mechanism to "PLAY" position by loading operation. (Refer to <A-2>)
3) Turn the "Rotor Unit" to check movement of reel gears.

B. CYLINDER UNIT REPLACEMENT

The Cylinder Unit can be replaced easily by the following method.

1) Remove the Top Panel.
2) Remove the 3 screws of the Cylinder Unit with a magnetized screw driver through the holes on the Bottom Plate as shown in Fig. S3.

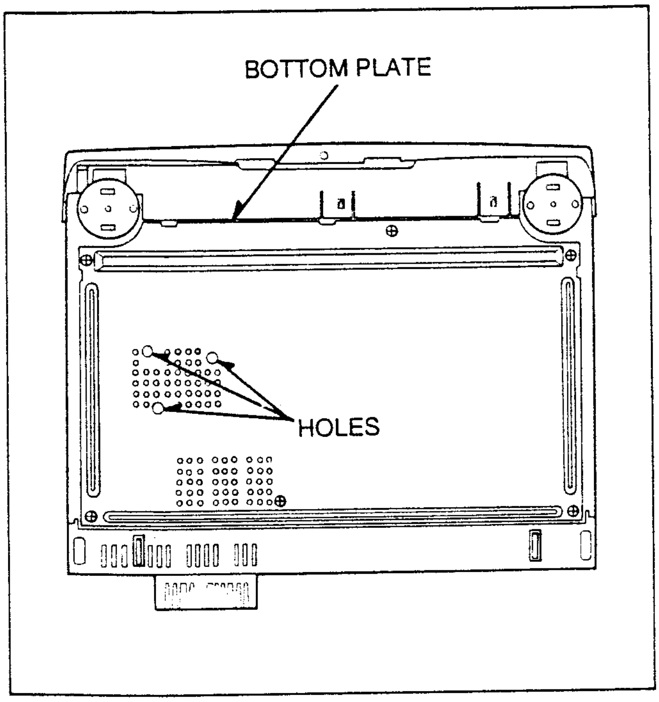

BOTTOM PLATE
HOLES

Fig. S3

C. CAPSTAN STATOR UNIT ASSEMBLY

When replacing the CAPSTAN STATOR UNIT, the CENTRE FIXING TOOL (VFK0851) must be used to fix the centre of CAPSTAN STATOR UNIT.

Method:
1) Place the CAPSTAN STATOR UNIT into position.
2) Loosely tighten the 3 screws.
3) Insert the CENTRE FIXING TOOL (VFK0851) as shown in Fig. S4.
4) Tighten the 3 screws.
5) Remove the CENTRE FIXING TOOL.

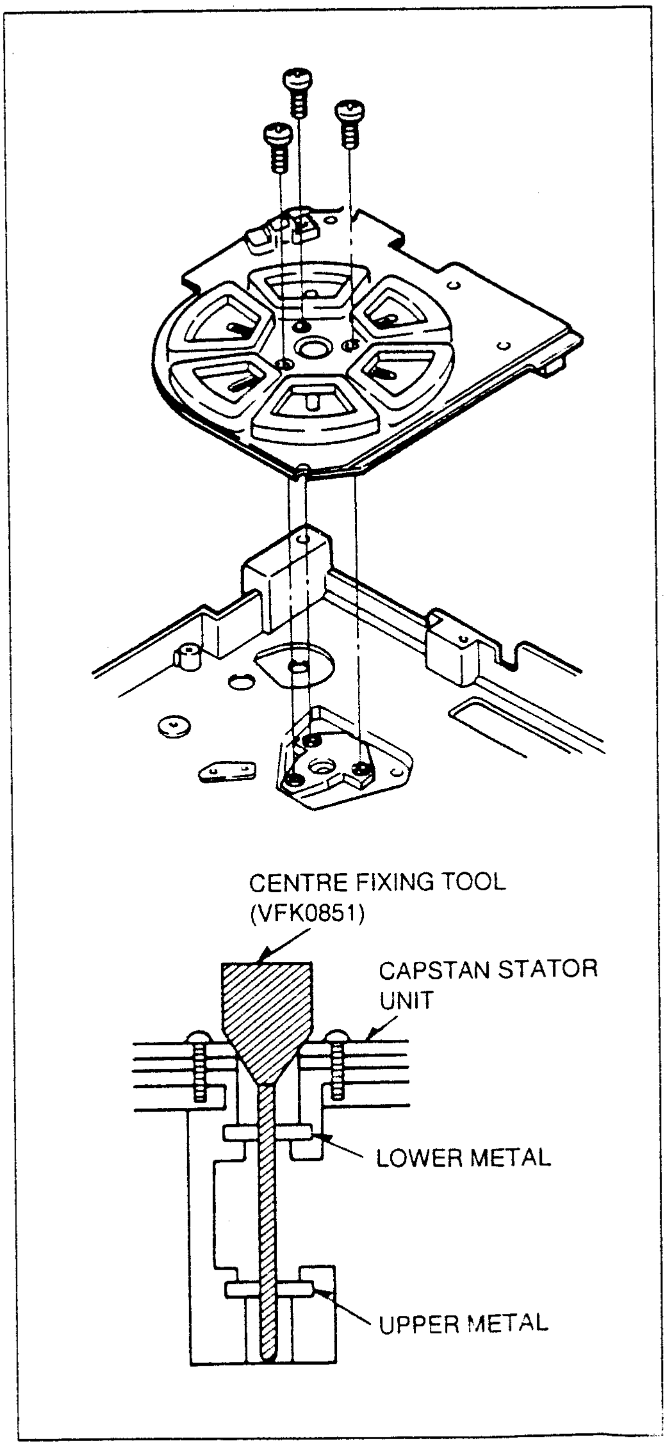

CENTRE FIXING TOOL
(VFK0851)
CAPSTAN STATOR UNIT
LOWER METAL
UPPER METAL

Fig. S4

D. EJECT OPERATION

The main cam gear rotates in the direction of the arrow. The projection (B) of the carriage connection gear engages with the recession (A) of the main cam gear. The carriage connection gear rotates in the direction of the arrow to perform the Eject operation.

<NOTE>
If the Eject operation is performed without the cassette carriage installed while repairing or making the mechanical phase alignment, the main cam gear will not engage with the carriage connection gear and will not rotate.
To perform the Eject operation with the cassette carriage not installed, it is necessary to rotate the carriage connection gear by hand in the direction of the arrow.

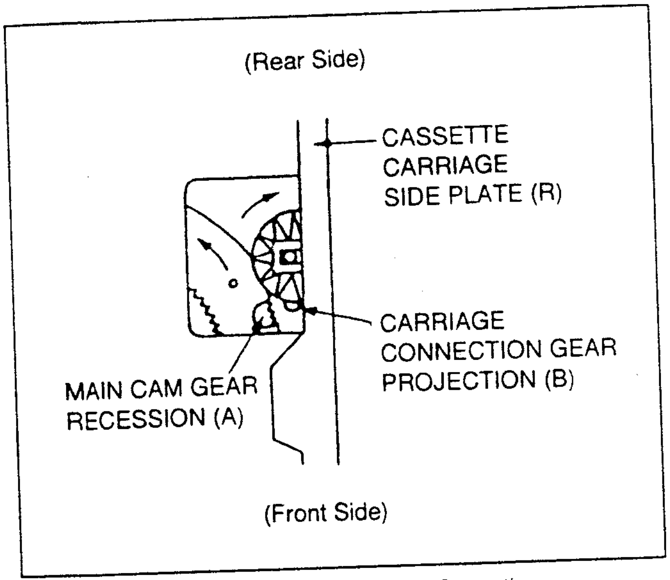

(Rear Side)
CASSETTE CARRIAGE SIDE PLATE (R)
CARRIAGE CONNECTION GEAR PROJECTION (B)
MAIN CAM GEAR RECESSION (A)
(Front Side)

Fig. S5 Top View of Eject Operation

E. TAKE-UP PHOTO SENSOR OPERATION

Note the following matters for Take-up Photo Sensor Operation.

1) While servicing of the K-Mechanism, the unit will not operate properly if a strong light (ex. Fluorescent light, Spot light) falls on the Take-up Photo Sensor. In this case, cover the Take-up Photo Sensor to prevent the light from falling on it.
2) While servicing of the K-Mechanism with "Power On" and without cassette tape inserted, the Unit does not operate properly.

F. POWER TRANSISTOR SERVICING

When removing the connector of the Power Transistor, hold the Power Transistor by hand to prevent damage.

1-1-2. REMOVAL OF THE CASSETTE TAPE

If the electrical circuit is defective and the action of unloading and front unloading do not work properly, it is possible to remove the cassette manually. There are 2 methods of removing the cassette.

1. HAND OPERATION

1) Remove the bottom plate.
2) Turn the WORM GEAR to "A" arrow mark direction manually as shown in Fig. S6, moving the LOADING POST to the unloaded position.
3) Turn the CAPSTAN clockwise to take up the tape.
4) Turn the WORM GEAR again to eject the cassette.

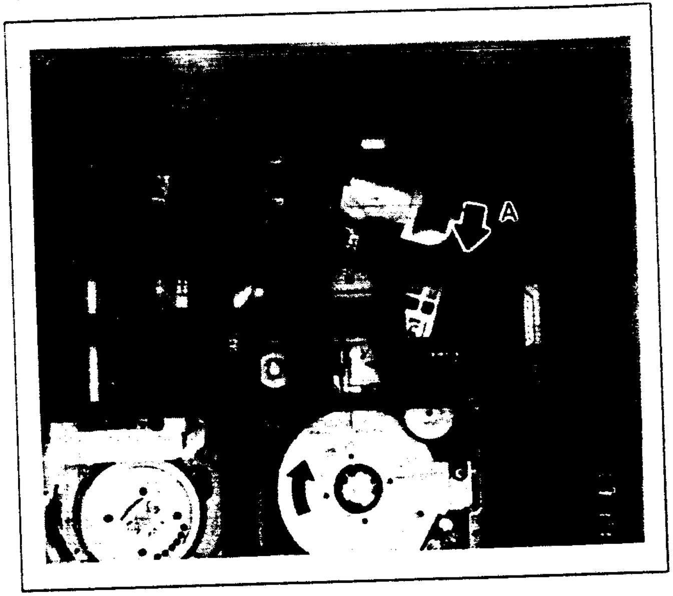


Fig. S6

2. BATTERY OPERATION

1) Connect the Battery (Manganes-Type R6 (AA) 3pcs./ +4.5V) to P1503 as shown in Fig. S7.
2) After moving the LOADING POST to the unloaded position, disconnect the battery to stop the motor.
3) Turn the CAPSTAN to clockwise to take up the tape.
4) Reconnect the battery to eject the cassette.

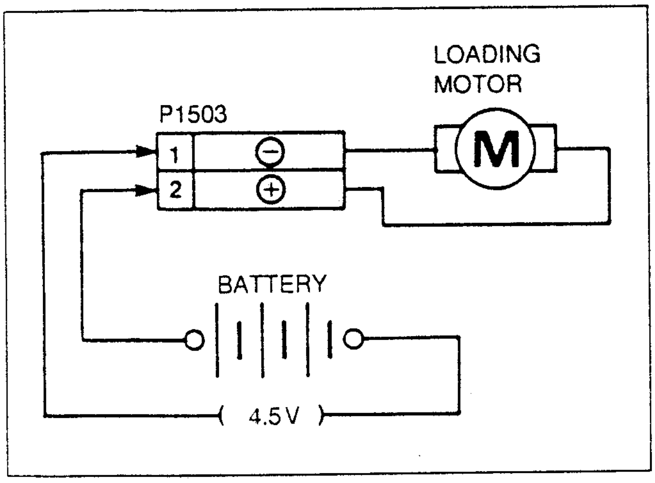


Fig. S7

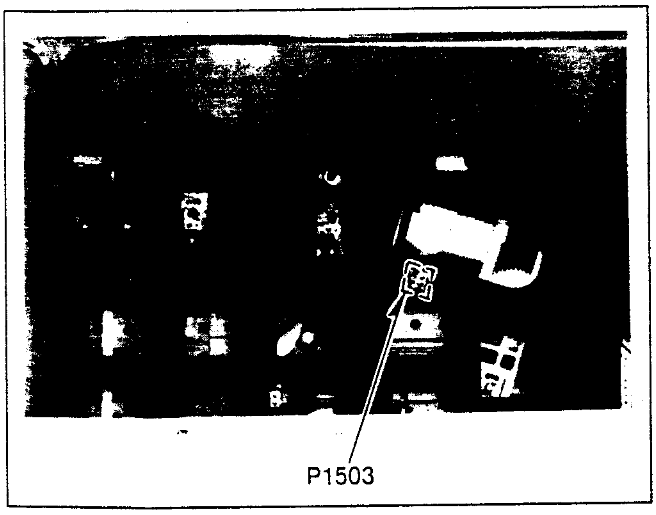


Fig. S8

If the cassette tape can not be removed by the above 2 methods, remove it by the following method.

1) Remove the Top Panel.
2) Remove the Front Panel Unit.
3) Lift up the Pinch Arm after removing spring.
4) Push the P5 Arm and remove the cassette tape from tape transportation (P1, P2, P3 and P5 Posts).
5) Turn the Capstan Motor to take up the tape.
6) Remove 1 screw from the Side Plate (R) Unit to disconnect the Rack Gear from the Carriage Connection Gear.
7) Take out the cassette tape from the Cassette Compartment.

1-1-3. FLAT CARD CABLE INSTLLATION

When installing the Flat Card Cable on the connector, install the Flat Card Cable with the cable contacts facing the connector contacts.

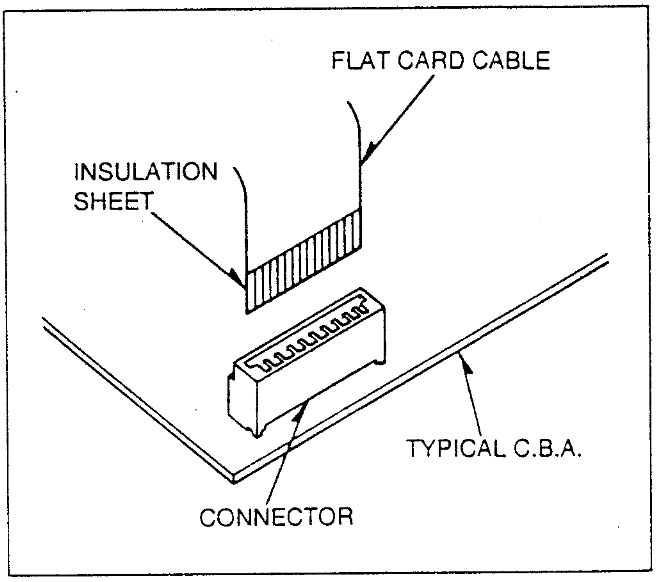


Fig. S9

1-1-4. CHANNEL MEMORY IC INITIALIZATION

When replacing the channel memory IC7503 (XLJ9021B), its IC should be initialized.

Note:1) It should be performed before tuning.
2) Do not turn off the power source during initialization or 1 second after.
3) Meaning of "INITIALIZATION" is to erase the "SKIP CH" In other words the number of channel position is the same as displayed channel.

Method:
1) Press the CH UP/DOWN Button so that the channel indicator indicates "3".
2) Connect a jumper wire between Pin 54 and Pin 35 of IC7501 for more than 1 second.
3) Channel indication changes from "3" to "1".

1-1-5. SERVICING THE PACK C.B.A.

When servicing the CAP Drive Pack C.B.A., Sub Audio Pack C.B.A., Luminance & Chrominance Pack C.B.A. and Sub Luminance & Chrominance Pack C.B.A., connections of extention cable are necessary as shown below.

PART NO	PART NAME	PCS	CONNECTION
VFK0678	18P EXTENTION CABLE	2	MAIN (PP3011) – SUB L/C (PS3303) MAIN (PP3012) – SUB L/C (PS3302)
VFK0764	10P EXTENTION CABLE	1	MAIN (PP2002) – CAP DRIVE (PS2002)
VFK0918	17P EXTENTION CABLE	1	MAIN (PP4501) – SUB AUDIO (PS4501)
VFK0937	9P EXTENTION CABLE	1	MAIN (PP3001) – L/C (PS301)
VFK0938	12P EXTENTION CABLE	2	MAIN (PP3002) – L/C (PS302) MAIN (PP2001) – CAP DRIVE (PS2001)
VFK0939	13P EXTENTION CABLE	1	MAIN (PP3003) – L/C (PS303)
VFK0940	14P EXTENTION CABLE	1	MAIN (PP3013) – SUB L/C (PS3501)

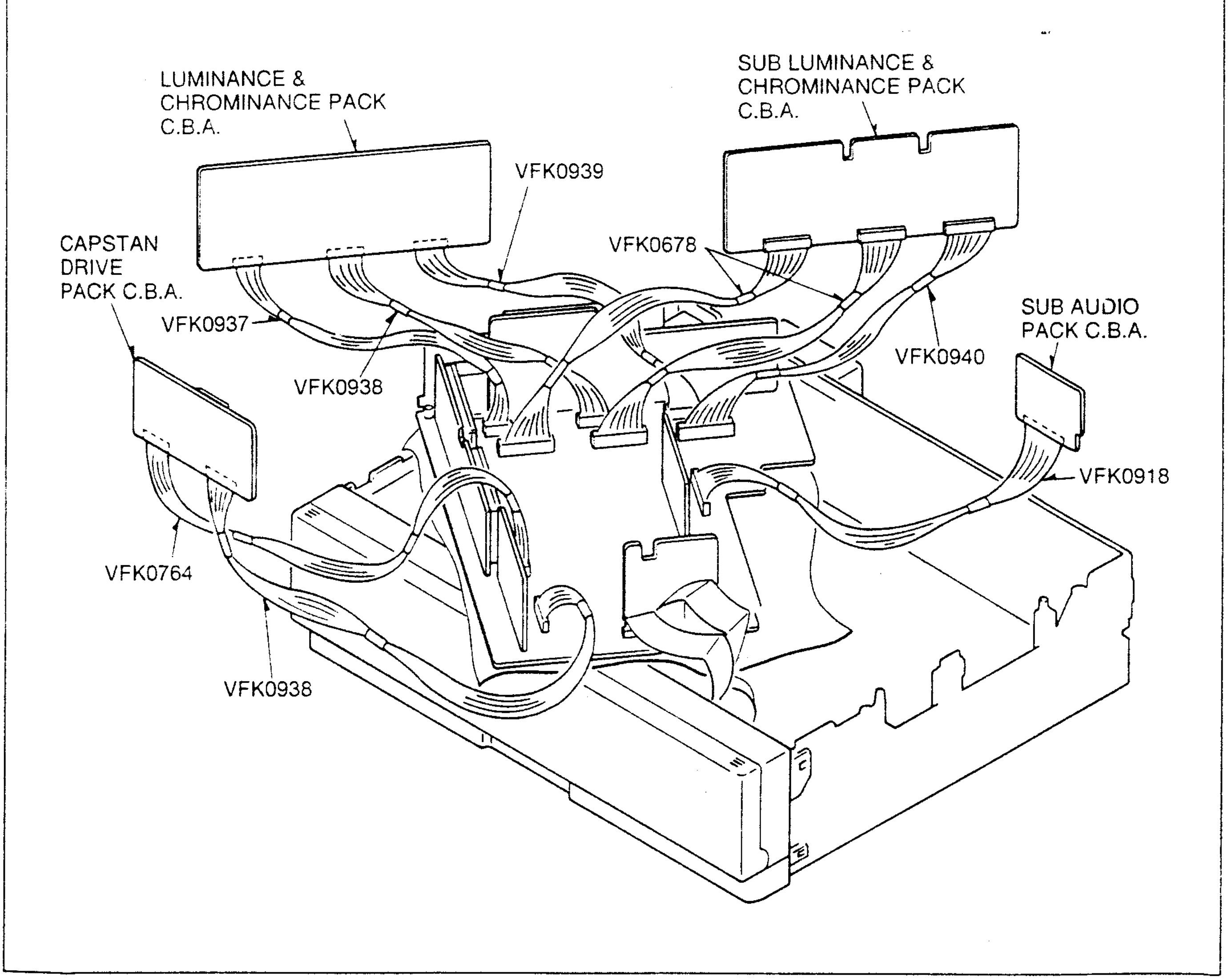

LUMINANCE & CHROMINANCE PACK C.B.A.
SUB LUMINANCE & CHROMINANCE PACK C.B.A.
VFK0939
CAPSTAN DRIVE PACK C.B.A.
VFK0678
VFK0937
VFK0938
VFK0940
SUB AUDIO PACK C.B.A.
VFK0918
VFK0764
VFK0938

Fig. S10

1-2. SERIAL CLOCK TRANSMISSION ERROR DISPLAY

If the Serial Clock is not transmitted from IC6001 to IC7501, "E9" is displayed as shown in Fig. T1. This indication will be displayed either during the Service Information Display mode or in normal mode.

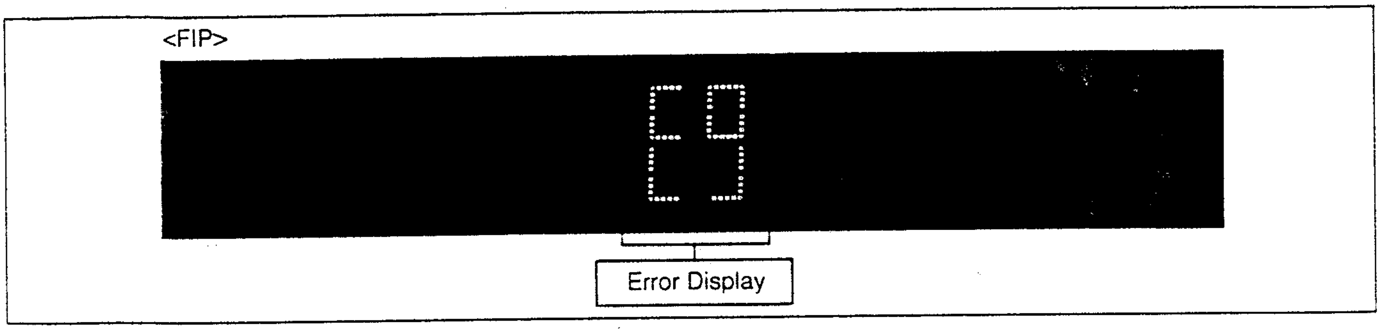
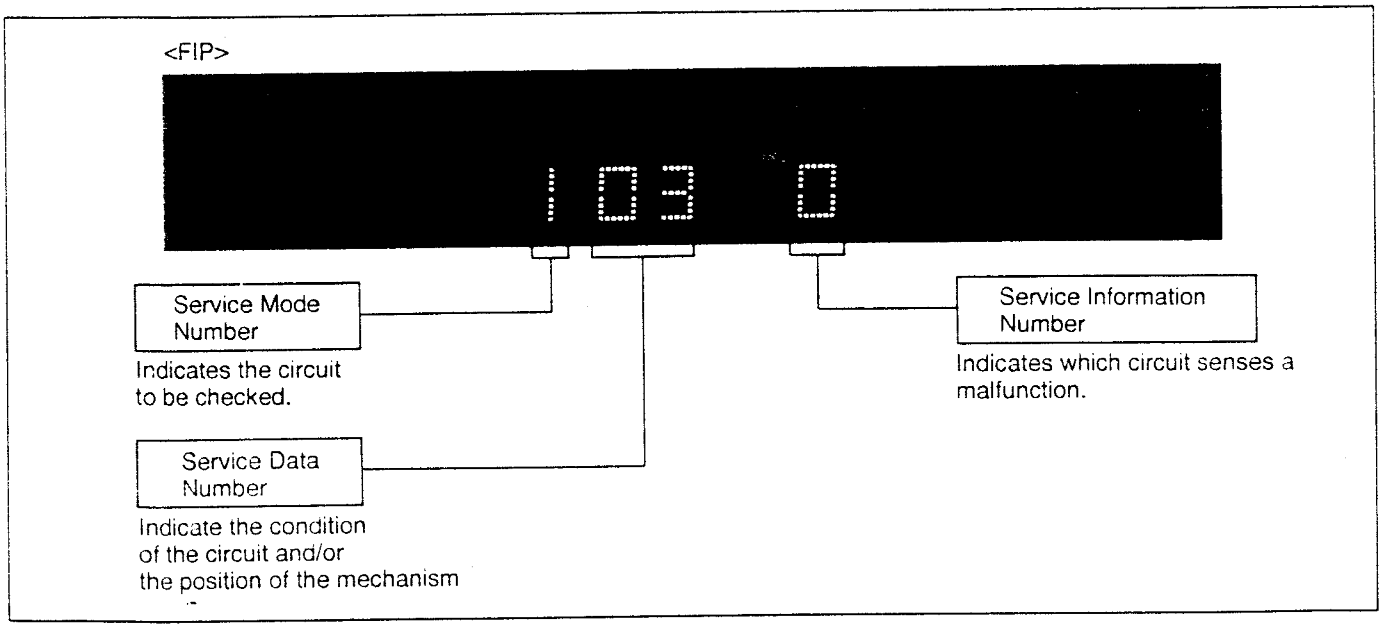


Fig. T1 Serial Data/Clock Transmission Error Display

1-3. SERVICE INFORMATION DISPLAY



Indicates the circuit to be checked.

Indicate the condition of the circuit and/or the position of the mechanism

Indicates which circuit senses a malfunction.

Fig. D1 Service Information Display

1-3-1. Purpose of Service Information Display

This information aids trouble shooting by indicating the source of the malfunction. The service mode number & service data number are used by the technician during repair while the service information can be used by the consumer to diagnose malfunctions allowing the technician to provide a more accurate repair cost estimate and reduce repair time.

1-3-2. Turning on Service Information Display

There are two ways to turn on the Service Information Display.

(1) Press the FF, REW and EJECT buttons simultaneously. The Service Information will be displayed for 1 minute.
(2) Connecting a Jumper wire between TP6010 and TP6011 will display the service information indefinitely.

In the Service Information Display, there are four digits divided into 3 functions.
The first digit indicates which of the 7 service modes that the unit is currently in.

MODE 1 : Checks tape protection circuit
MODE 2 : Checks tape transport mechanism
MODE 3 : Checks mode switching operation
MODE 4 : Checks control buttons
MODE 5 : Checks capstan motor
MODE 6 : Checks cylinder motor
MODE 7 : Checks loading/unloading operation

The second and third digits are service data which indicate the condition of the circuit or mechanism being checked.

The forth digit is the service Information display. It is to be used by the consumer to help determine the source of a malfunction. The service information display operates independently of the service modes and stores the fault indication in memory for as long as AC power is supplied.

1-3-3. Use of Service Modes

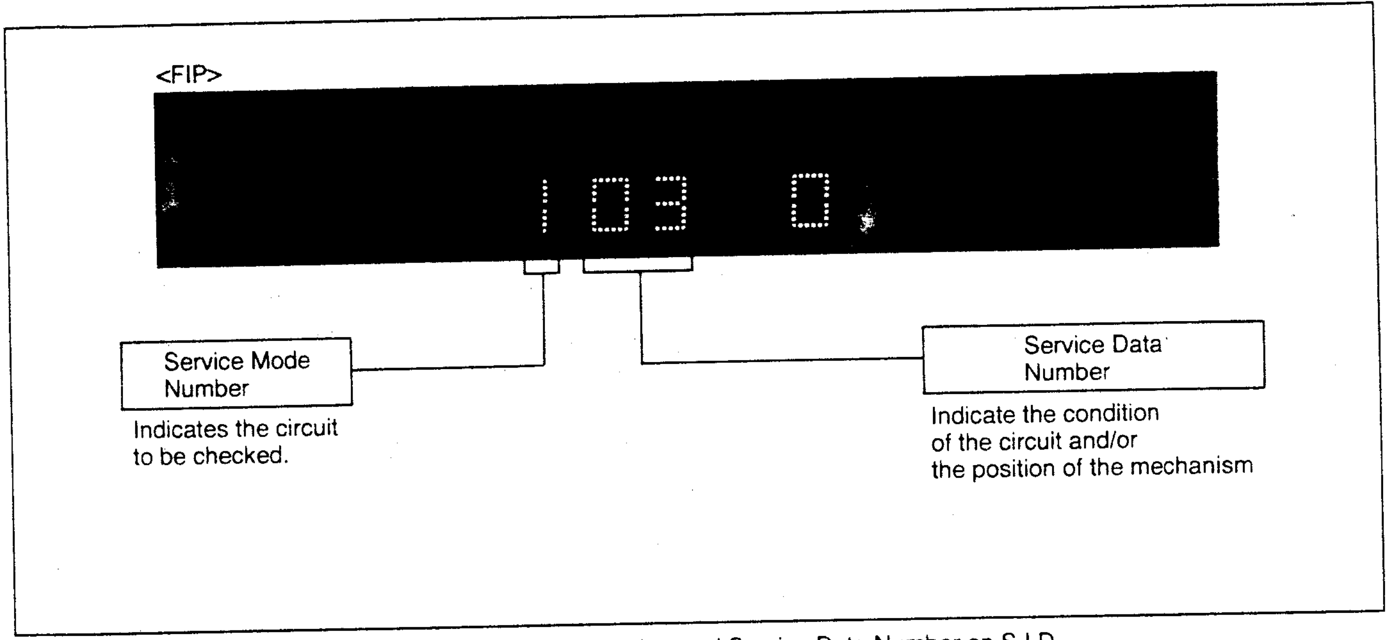

<FIP>
1 03 0
Service Mode Number
Indicates the circuit to be checked.
Service Data Number
Indicate the condition of the circuit and/or the position of the mechanism

Fig. D2 Service Mode Number and Service Data Number on S.I.D.

(1) Turn on Service Information Display.
(2) To change Service Modes press the FF, REW and EJECT buttons simultaneously.
(3) Mode 1 : Checks that the Sensor LED, Supply & Take-up Sensor circuits check the circuits by blocking the light from the Sensor LED to either or both Supply & Take-up Sensors. When the light is blocked to both sensors, "00" should be indicated on the service data number. When the light is blocked to the supply sensor, "01" should be indicated.
(4) Mode 2 : Checks the mode switch circuit while indicating mechanism position. Service Data Numbers indicate the position of the mode switch and there by the mechanism position.
(5) Mode 3 : Checks that mode switch circuit operations have been completed. Service Data Number should indicate "00" after each mechanism operation is completed.
(6) Mode 4 : Checks the operation circuit. Indicates if IC6001 receives the operating commands from the mode buttons and/or remote controller.
(7) Mode 5 : Checks the capstan motor circuit. Indicates if the IC6001 has received the command to rotate the capstan motor.
(8) Mode 6 : Checks the cylinder motor circuit. IC6001 has received the command to rotate the cylinder motor.
(9) Mode 7 : Checks the Loading/Unloading Operation. The Loading Motor rotates for loading operation when the "PLAY" button pressed. The Loading Motor rotates for unloading operation when the "STOP" button is pressed. This mode can be displayed indefinitely until the OPERATE button is pressed.

<NOTE>
Refer to Fig. D5 for details of Service Data Number.

1-3-4. Service Information Number

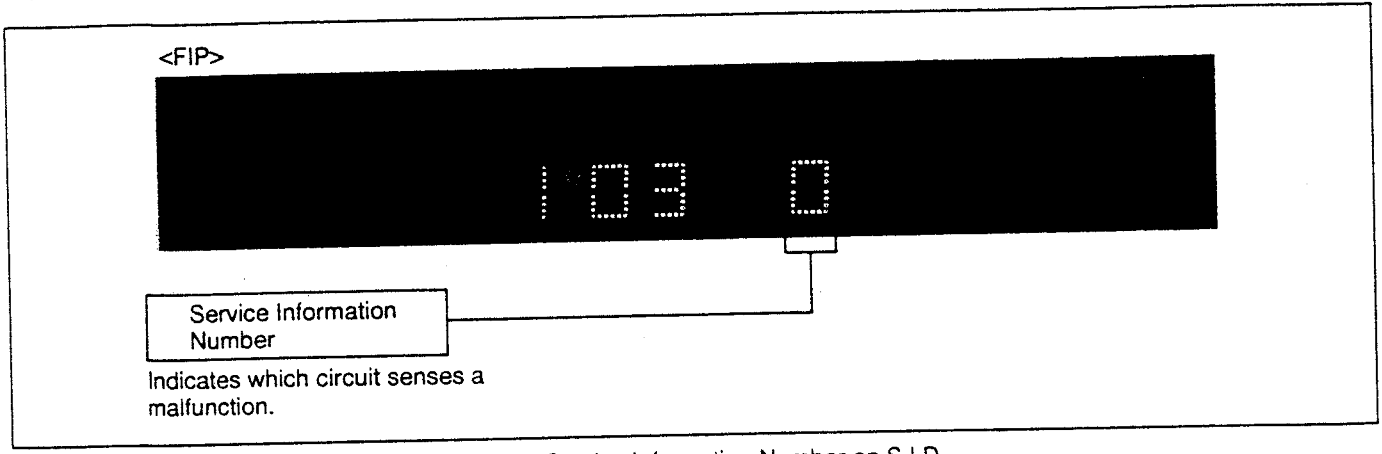

<FIP>
103 0
Service Information Number
Indicates which circuit senses a malfunction.

Fig. D3 Service Information Number on S.I.D.

Refer to Fig. D4 for details of Service Information Number.

Note:
The Service Information Number display is independent of the service mode display.
The Service Information Number will be stored as long as AC power is supplied.
If a second error occurs, only the most recent error will be displayed.

Service Information Number	Malfunction
0	Normal (No problem)
1	Cylinder stop
2	Tape reel stop
3	Stop at position other than 4 or 6
4	Stop during unloading
5	Faulty capstan rotation
6	Stop during Cassette-In/Eject operation

Fig. D4 Service Information

Service mode Number	Note for checking Service Data Numbers	Service Data Numbers	Indication	Remarks
1	—	00	No light detected at either sensor	Tape not required
		01	Tape Begining. Light to Supply Photo Sensor is blocked.	
		02	Tape End. Light to Take-up Photo Sensor is blocked.	
		03	Light detected at both sensors.	
2	—	00	EJECT	Tape Reuired ∗1 : STOP3; The Pinch Roller is on the capstan motor shaft. ∗2 : STOP; The Pinch Roller is off the capstan motor shaft. Refer to Fig. D7 to Check mechanism Position and timing. Note : Supply and Take-up Photo Sensor is inhibited.
		01	Cassette-down	
		02	REV, REV SLOW	
		03	Loading/Unloading	
		04	PLAY/REC, STILL/PAUSE, CUE, FWD SLOW, STOP3 *1	
		05	STOP *2	
		06	FF/REW	
		07	Intermediate position	
3	Disregard service data displayed until mechanism operation is completed. Then the display should indicate "00".	00	Any display other than "00" indicates a fault in the mode switch circuit or system.	Tape Required.
4	Display only when the operating button is pressed.	Refer to Fig. D6		Tape not required.
5	Left digit only, disregard Right digit display.	8 1 Left Digital Right Digital	8, 9, u, A, –, n, L, and no display indicate that the Capstan motor "PLAY" command received by IC6001.	Tape required. If a symbol other than those listed is displayed, a malfunction in that circuit is indicated.
	Right digit only, disregard left digit display.	8 7 Left Digital Right Digital	1, 2, 3, 4, 5, 6, 7, indicate that the Capstan motor "CUE, FF, Forward Slow" commands received by IC6001.	
	Right digit only, disregard left digit display.	8 Left Digital Right Digital	8, 9, u, A, –, n, L, and no display indicate that the Capstan motor Reverse, Rew, Reverse Slow commands received by IC6001.	
6	Left digit only, disregard Right digit display.	1 0 Left Digital Right Digital	1, 3, 5, 7, 9, A, n and no display indicate that the cylinder motor "ON" command received by IC6001.	Tape required. If a symbol other than those listed is displayed, a malfunction in that circuit is indicated.

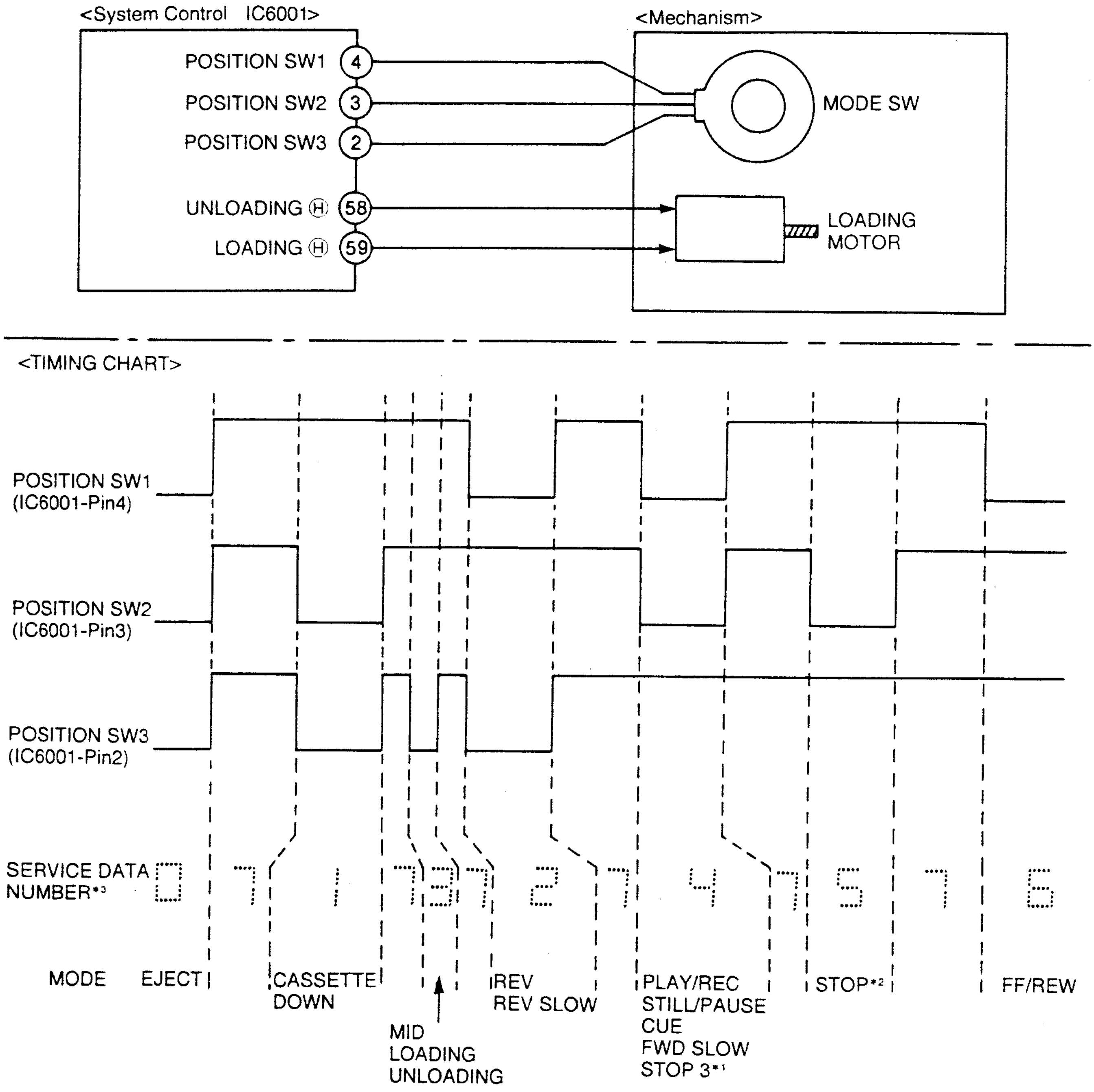
Fig. D5 Service Data Display and Indication

SERVICE DATA NUMBERS	MODE BUTTONS	SERVICE DATA NUMBERS	MODE BUTTONS
3n	OPERATE	—	RESET
01	EJECT	U4	PROG. CLEAR
09	AUDIO DUB	—	ESC
A3	INSERT	49.4U	INDEX (REMOTE CONTROLLER)
-9	PAL/MESECAM	—	TRACKING (+, -)/V-LOCK (REMOTE CONTROLLER)
—	CHECK/PROG.	U0	MARK IN
34.35	∧ ∨ (REMOTE CONTROLLER)	U1	MARK OUT
—	NEXT/SP/LP	—	TAPE SELECT (REMOTE CONTROLLER)
—	SLEEP/SHIFT	—	PLAYER
A4	TIMER REC	—	RECORDER
08	REC	—	RECORDING SP/LP (REMOTE CONTROLLER)
—	CLOCK SET	—	CANCEL (REMOTE CONTROLLER)
—	TUNER PRESET	10	SU (1) (REMOTE CONTROLLER)
80	PAUSE/STILL	11	MO (2) (REMOTE CONTROLLER)
0U	PLAY	12	TU (3) (REMOTE CONTROLLER)
00	STOP	13	WE (4) (REMOTE CONTROLLER)
06	PAUSE/STILL (REMOTE CONTROLLER)	14	TH (5) (REMOTE CONTROLLER)
03.02	FF, REW	15	FR (6) (REMOTE CONTROLLER)
U5	EDIT MENU	16	SA (7) (REMOTE CONTROLLER)
—	▲	17	SU~SA (8) (REMOTE CONTROLLER)
—	TRANSMIT (REMOTE CONTROLLER)	18	MO~SA (9) (REMOTE CONTROLLER)
0	SLOW (REMOTE CONTROLLER)	19	MO~FR (0) (REMOTE CONTROLLER)
—	▼	3A	-/-- (REMOTE CONTROLLER)
—	ENTER	—	AUDIO OUT
56	DISPLAY (REMOTE CONTROLLER)	57	OSD (REMOTE CONTROLLER)

Fig. D6 Service Data Display for Service mode 4

1-3-5. Timing Chart from Mode SW to System control IC6001

System control IC6001 senses the mechanism position though the Mode SW.
Fig. D7 shows the timing for Service Mode Number 2.



<System Control IC6001>
POSITION SW1
4
POSITION SW2
3
POSITION SW3
2
UNLOADING Ⓗ
58
LOADING Ⓗ
59
<Mechanism>
MODE SW
LOADING MOTOR
<TIMING CHART>
POSITION SW1 (IC6001-Pin4)
POSITION SW2 (IC6001-Pin3)
POSITION SW3 (IC6001-Pin2)
SERVICE DATA NUMBER*3
0
7
1
7
3
7
2
7
4
7
5
7
6
MODE
EJECT
CASSETTE DOWN
MID LOADING UNLOADING
REV REV SLOW
PLAY/REC STILL/PAUSE CUE FWD SLOW STOP 3*1
STOP*2
FF/REW

∗1 : Stop 3; The Pinch Roller is on the capstan motor shaft.

∗2 : Stop; The Pinch Roller is off the capstan motor shaft.

∗3 : Service Data Number; This is for Service Mode Number 2.

Fig. D7 Timing Chart of Mode SW

1-4. TECHNICAL INFORMATION

1-4-1. EDIT CONTROLLER FUNCTION

This VCR is equipped with programme editing.
If connected via edit cable to another VCR or a movie camera, it is possible to control such functions as tape playback and editing.

(1) Connecting this VCR with another identical one.

1) Connect the two VCRs with 5-pin edit cable.
2) Connect the AV1 socket on the playback VCR to the AV2 socket on the recording VCR.
3) Connect the AV1 socket on the recording VCR to the TV.
4) Select A2 by pressing "Λ"V" or INPUT SELECT on the recording VCR.
5) Set EDIT MODE to Passive on the playback VCR, and to RECORDER on the recording VCR.
6) Control is performed by the recording VCR.

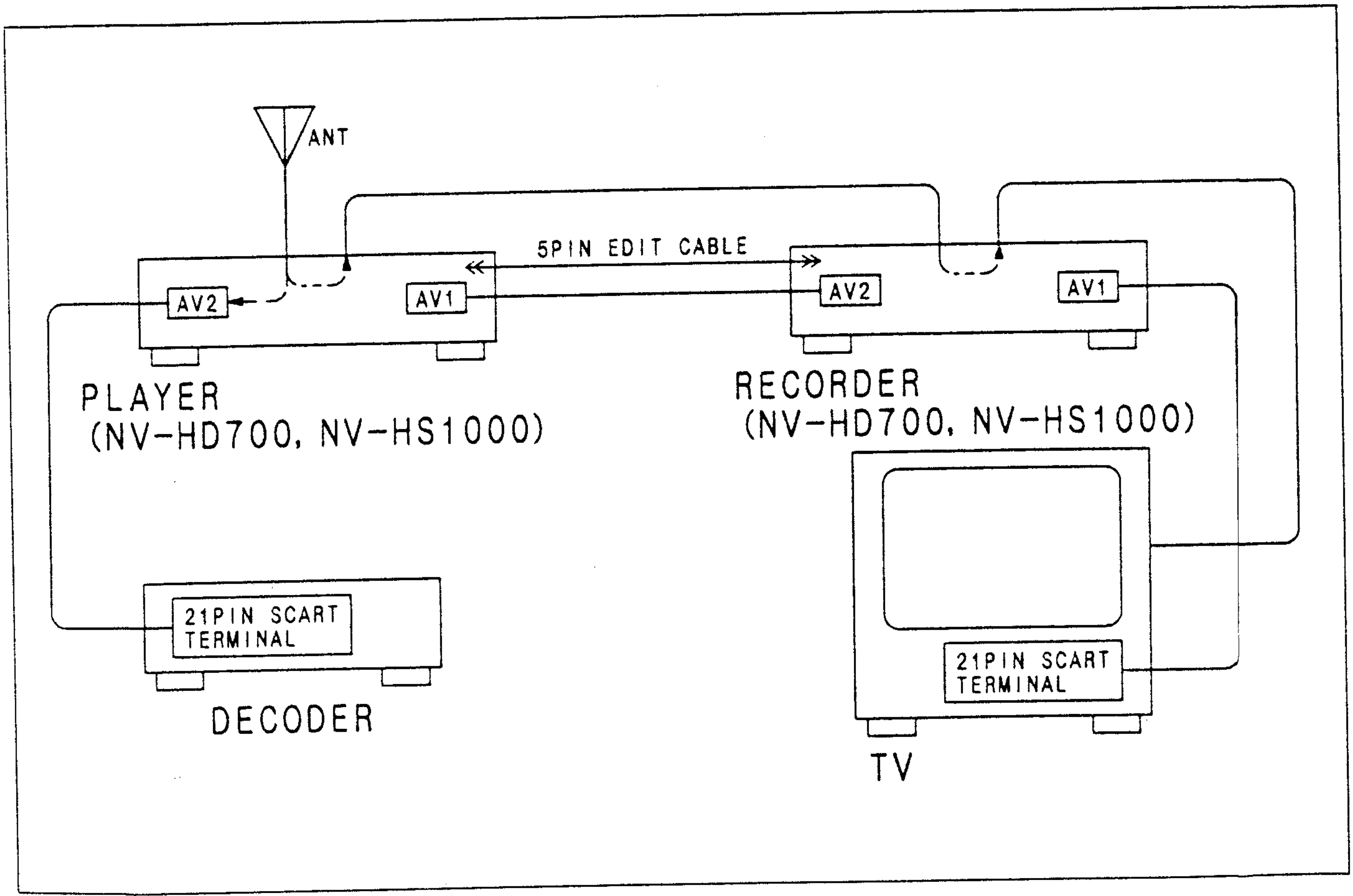

ANT
5PIN EDIT CABLE
AV2
AV1
AV2
AV1
PLAYER
(NV-HD700, NV-HS1000)
RECORDER
(NV-HD700, NV-HS1000)
21PIN SCART TERMINAL
DECODER
21PIN SCART TERMINAL
TV

Fig. A1 Connection of Editing Controller Function

1-4-2. AI (ARTIFICAL INTELLIGENCE) RECORDING FUNCTION

The recording and playback are adjusted to achieve optimum picture quality from tapes with varying charactristics.

(1) Detail explanation

<Playback mode>

The picture quality is varying from the different tapes as follows:

1) If the output level is low, from worn or rental cassette tapes, a soft picture is obtained by the RF equlizer and picture control on the Lumi./Chro. Pack C.B.A.
2) If the output level is medium, from normal tapes, a sharp picture is obtained from the emphasis and picture control on the Lumi./Chro. Pack C.B.A.
3) If the output level is high, from HG/S tapes, a sharp and detailed picture is obtained from the RF equlizer, emphasis picture control and noise canceller on the Lumi./Chro. Pack C.B.A.

<Recording mode>

The optimum recording level is used for all head conditions and for all types of tapes.

1) The luminance S/N is boosted 2dB.
2) Recording head wear compensation.
3) The optimum recording current is achieved in 1.5 seconds.

(2) Signal Flow

<Playback mode>

1) When the AI is turned on, the AI TRIG (H) signal is supplied to IC3403 from pin 122 of IC6001. The AI CNT (H) is supplied to the Lumi./Chro. Pack C.B.A., IC6001 and the Erase Current Generator circuit.
2) The RF C signal from the Head Amp C.B.A. is used by the IC3403 to detect the output level of the video head.
3) After receiving the RF C signal, the IC3403 supplies ENVE1 and ENVE2 to the Lumi./Chro. Pack as shown in Fig. A1.
4) The optimum picture is output from the video circuit.

<Recording mode>

1) When the AI is turned on, the AI TRIG (H) signal is supplied to IC3403 from pin 122 of IC6001. The AI CNT (H) is supplied to the Lumi./Chro. Pack C.B.A., IC6001 and the Erase Current Generator circuit.
2) Before recording, the recording and playback operations are done in the still mode to determine the optimum recording current. The signal level detection is the same as the playback mode operation. The recording current is set by the REC CUR1, 2, 3 signals from IC3403. IC3405 is used for erasing the tape in the still mode.

<Others>

The NTSC (L) signal is used for setting the system to NTSC or PAL.

Other command signals are used to control the performance timing.

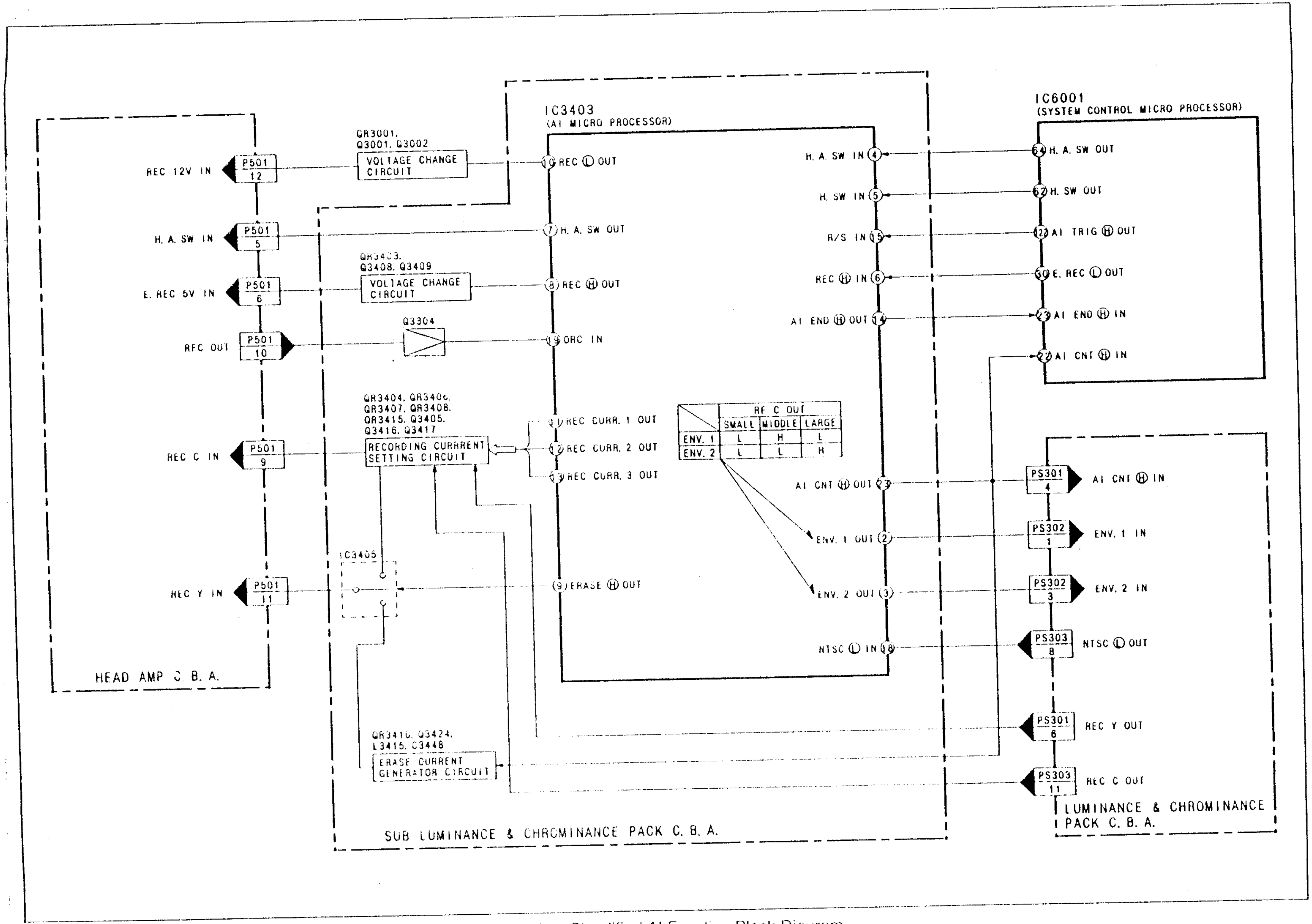

IC6001
(SYSTEM CONTROL MICRO PROCESSOR)
64 H. A. SW OUT
62 H. SW OUT
22 AI TRIG Ⓗ OUT
50 E. REC Ⓛ OUT
23 AI END Ⓗ IN
27 AI CNT Ⓗ IN
IC3403
(AI MICRO PROCESSOR)
10 REC Ⓛ OUT
7 H. A. SW OUT
8 REC Ⓗ OUT
19 ORC IN
11 REC CURR. 1 OUT
12 REC CURR. 2 OUT
13 REC CURR. 3 OUT
9 ERASE Ⓗ OUT
H. A. SW IN 4
H. SW IN 5
R/S IN 15
REC Ⓗ IN 6
AI END Ⓗ OUT 14
AI CNT Ⓗ OUT 23
ENV. 1 OUT 2
ENV. 2 OUT 3
NTSC Ⓛ IN 18
RF C OUT
SMALL
MIDDLE
LARGE
ENV. 1 L H L
ENV. 2 L L H
QR3001, Q3001, Q3002
VOLTAGE CHANGE CIRCUIT
QR3403, Q3408, Q3409
VOLTAGE CHANGE CIRCUIT
Q3304
QR3404, QR3406, QR3407, QR3408, QR3415, Q3405, Q3416, Q3417
RECORDING CURRRENT SETTING CIRCUIT
IC3405
QR3410, Q3424, L3415, C3448
ERASE CURRENT GENERATOR CIRCUIT
P501 12
P501 5
P501 6
P501 10
P501 9
P501 11
REC 12V IN
H. A. SW IN
E. REC 5V IN
RFC OUT
REC C IN
REC Y IN
HEAD AMP C. B. A.
SUB LUMINANCE & CHROMINANCE PACK C. B. A.
PS301 4
PS302 1
PS302 3
PS303 8
PS301 6
PS303 11
AI CNT Ⓗ IN
ENV. 1 IN
ENV. 2 IN
NTSC Ⓛ OUT
REC Y OUT
REC C OUT
LUMINANCE & CHROMINANCE PACK C. B. A.

Fig. A2 Simplified AI Function Block Diagram

(2) Signal Flow

Fig. A3 below describes Video/Audio signal flow.

The control commands go from Recorder to Player through 5-Pin Edit Cable.

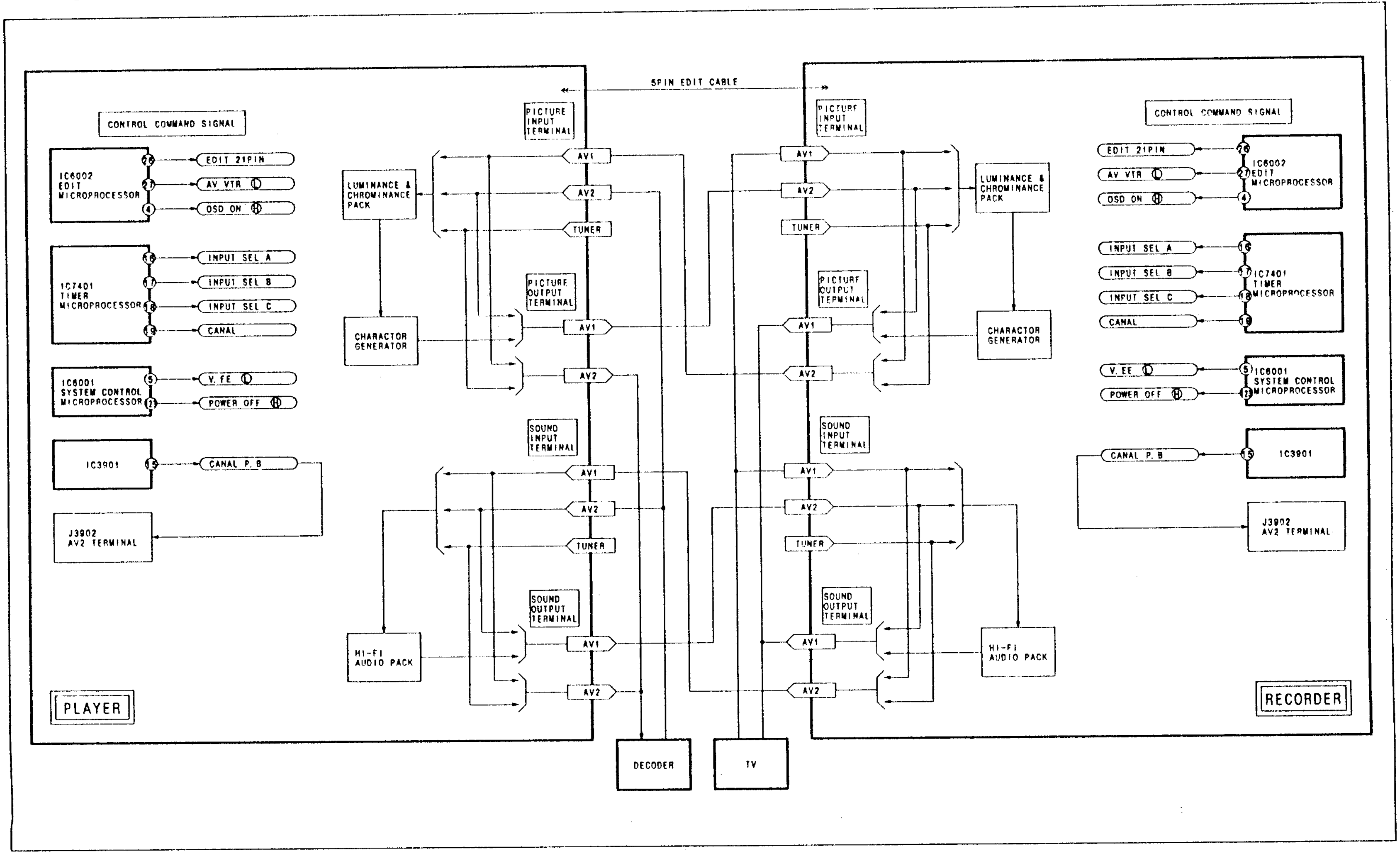

5PIN EDIT CABLE
PLAYER
CONTROL COMMAND SIGNAL
IC6002 EDIT MICROPROCESSOR
26
27
4
EDIT 21PIN
AV VTR Ⓛ
OSD ON Ⓗ
IC7401 TIMER MICROPROCESSOR
16
17
18
19
INPUT SEL A
INPUT SEL B
INPUT SEL C
CANAL
IC6001 SYSTEM CONTROL MICROPROCESSOR
5
12
V. FE Ⓛ
POWER OFF Ⓗ
IC3901
15
CANAL P. B
J3902 AV2 TERMINAL
LUMINANCE & CHROMINANCE PACK
CHARACTOR GENERATOR
HI-FI AUDIO PACK
PICTURE INPUT TERMINAL
PICTURE OUTPUT TERMINAL
SOUND INPUT TERMINAL
SOUND OUTPUT TERMINAL
AV1
AV2
TUNER
DECODER
TV
RECORDER
CONTROL COMMAND SIGNAL
IC6002 EDIT MICROPROCESSOR
EDIT 21PIN
AV VTR Ⓛ
OSD ON Ⓗ
IC7401 TIMER MICROPROCESSOR
INPUT SEL A
INPUT SEL B
INPUT SEL C
CANAL
IC6001 SYSTEM CONTROL MICROPROCESSOR
V. EE Ⓛ
POWER OFF Ⓗ
IC3901
CANAL P. B
J3902 AV2 TERMINAL
LUMINANCE & CHROMINANCE PACK
CHARACTOR GENERATOR
HI-FI AUDIO PACK

Fig. A3 Signal Flow

(3) Input/Output Chart for Edit IC6002 (M38024V1BK)

Pin Number	Input/Output	Port Name	Function
1	O	OSD CLK	Character Generator Control Clock
2	O	OSD DATA	Character Generator Control Data
3	O	OSD CS	Character Generator Control Chip Select (L)
4	O	OSD ON (H)	Editing OSD ON (H)
5, 6	-	----------	Not used
7	I	L CLK CNT	Serial Clock Counter Terminal
8	-	----------	Not used
9	I	SYS CLK	System Control Serial Clock
10	O	SYS OUT	System Control Serial Data
11	I	SYS IN	System Control Serial Data
12	O	DATA INH	5P Clock Data Output Inhibit (H)
13	I	CLK INPUT	Timer/5P/Serial Clock
14	O	DATA OUT	5P/Serial Data
15	I	DATA IN	5P/Serial Data
16, 17	-	----------	Not used
18	-	GND	GND
19	I	RESET (L)	Reset by Low signal
20	I	L CLK	Serial Data timing detection
21	I	5P CLK	5P Clock detection
22	I	OSC IN	7.37MHz OSC
23	O	OSC OUT	7.37MHz OSC
24	-	GND	GND
25	O	JOG LED (H)	JOG/SHUTTLE Mode ON (H)
26	O	EDIT21P	AV2 Terminal Output (H) in the Editing OSD mode
27	O	AVVTR (L)	AV2 Terminal Output (H) in the Editing OSD mode
28	O	TBC SEARCH (L)	CUE/REV Detection in TBC mode
29	O	TBC TRICK (L)	PLAY Detection in TBC mode

Pin Number	Input/Output	Port Name	Function
30	O	TBC ON (L)	TBC ON (L)
31	-	----------	Not used
32	O	EDIT (H)	Picture Edit mode (H)
33	I	TEST SIGNAL (H)	Tuner Preset Display ON (H)
34	I	OSD SECAM (H)	OSD ON (H) by SECAM System
35	O	INSIDE (H)	Internal OSD ON (H)
36	I	SEARCH MUTE OK (H)	Sound Serch Mute (H)
37	I	VITC OK (H)	VITC ON (H)
38	I	LANGUAGE2	<OSD Langage Setting> 000 = English, 001 = German 010 = French, 011 = Italian 100 = Spanish, 101 = Dutch 110 = Swedish
39	I	LANGUAGE1	
40	I	LANGUAGE0	
41 ~ 46	-	----------	Not used
47	O	BUS SELECT (B)	Timer/5P/Serial Bus Selection
48	O	BUS SELECT (A)	Timer/5P/Serial Bus Selection
49	I	CHECK (L)	Factory mode (L)
50 ~ 56	-	----------	Not used
57, 58	I	VDD	5V
59	-	GND	GND
60	I	EE DATA IN	Data from IC6007 (EEPROM)
61	O	EE DATA OUT	Data to IC6007 (EEPROM)
62	O	EE CLK	Clock to IC6007 (EEPROM)
63	O	EE CS	Chip Select to IC6007 (EEPROM)
64	I	REC/P1/P2	Recorder (H)/Player1 (M)/Player2 (L)

1-4-3. NEW SERIAL DATA TRANSMISSION

1. Serial data transmission

To exchange the data among the microprocessors, the serial data transmission is used.

Serial data transmission is used because of the relatively large amount of information that can be sent in a signal data line.

Actually two lines are required in this system, an in/out data line and a clock line.

The data in/out line between each microprocessor is timeshared.

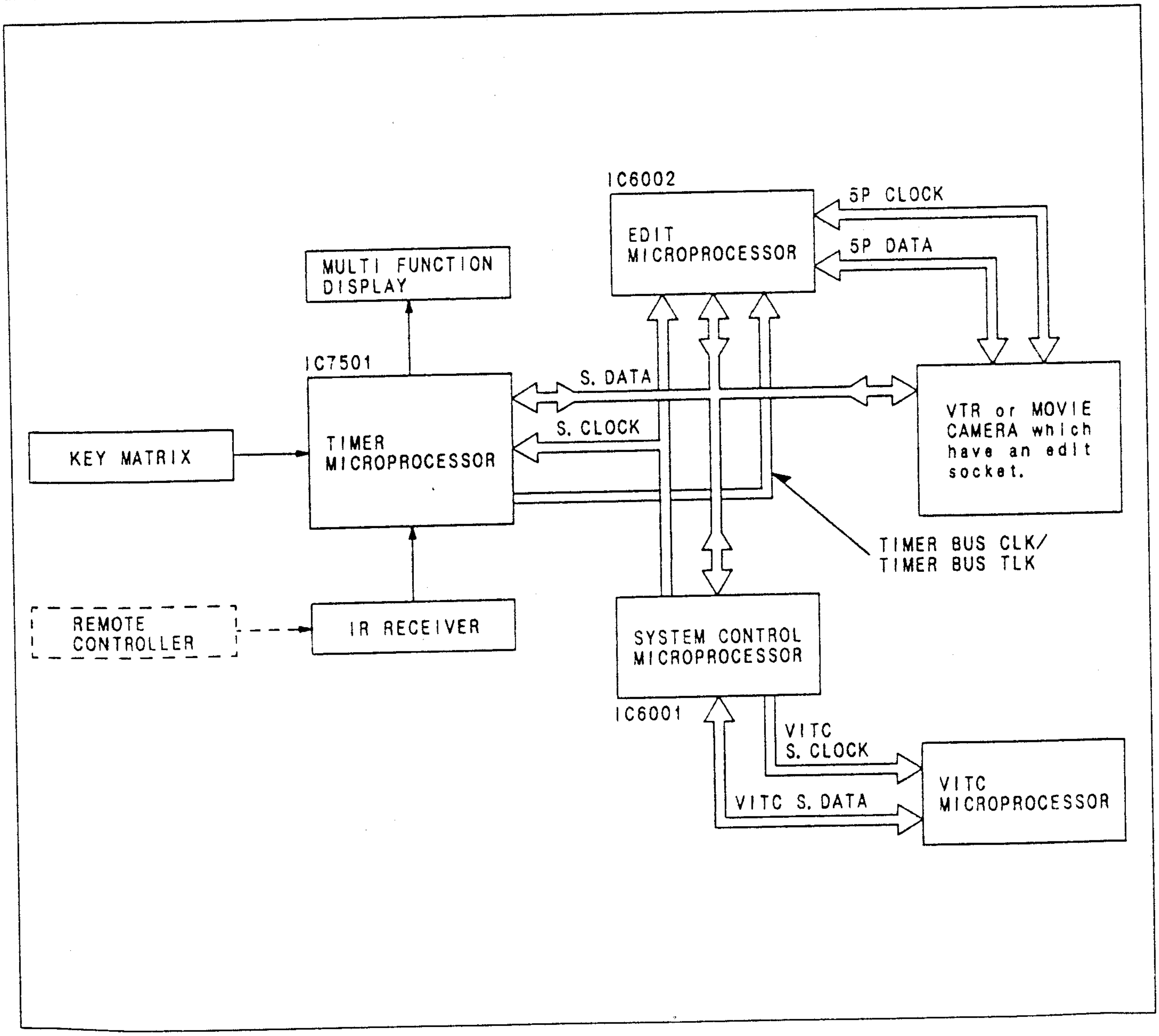

IC6002
EDIT MICROPROCESSOR
5P CLOCK
5P DATA
MULTI FUNCTION DISPLAY
IC7501
S. DATA
S. CLOCK
KEY MATRIX
TIMER MICROPROCESSOR
VTR or MOVIE CAMERA which have an edit socket.
TIMER BUS CLK/
TIMER BUS TLK
REMOTE CONTROLLER
IR RECEIVER
SYSTEM CONTROL MICROPROCESSOR
IC6001
VITC S. CLOCK
VITC S. DATA
VITC MICROPROCESSOR

Fig. A4

2. Serial clock line and data line

This serial clock signal is a reference signal which is used to control the timing of the data transmission among the microprocessors.

The previous transmission has only 13 clocknumber, the new serial data transmission has 20 clock number in it.

Blocks 1 to 10 of both formats will be the same.

Now the clock number from 1 to 13 is same.

The contents of new data is as shown below.

S. Clock is used for transmission of the data among the system control microprocessor, timer microprocessor and edit microprocessor.

And 5P Clock which is composed of the clock no. 1, 3, 4, 5, 7, 8, 9 works to transmit the data between the edit microprocessor and the VTR or MOVIE CAMERA which has an edit socket.

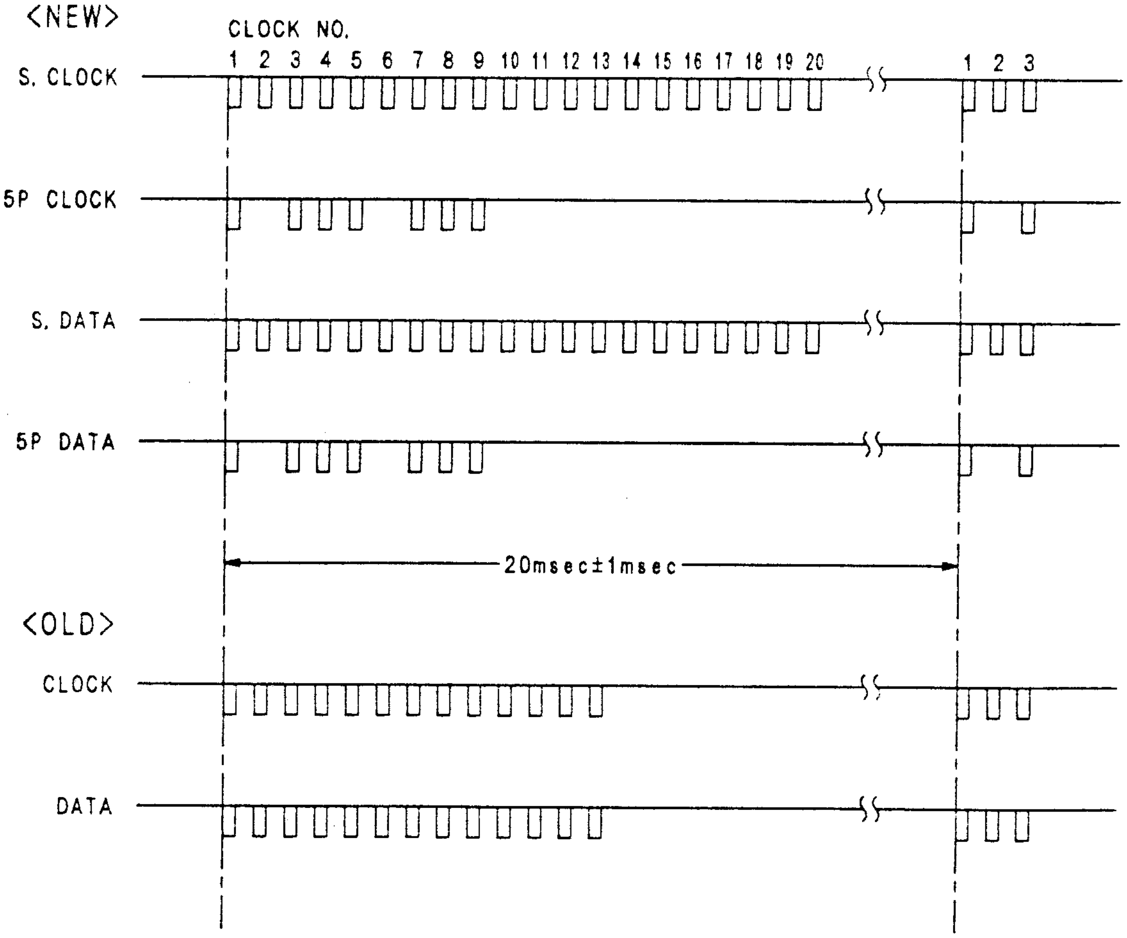

<NEW>
CLOCK NO.
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
1 2 3
S. CLOCK
5P CLOCK
S. DATA
5P DATA
20msec±1msec
<OLD>
CLOCK
DATA

Fig. A5

CLOCK NO	TRANSMISSION	CONTENTS OF DATA	CLOCK NO	TRANSMISSION	CONTENTS OF DATA
1	IC7501 ← IC6001	TAPE SPEED M/R/S etc.	11	IC7501 ← IC6001	SEARCH MODE CONDITION CODE
2	IC6001 ← IC7501	WIRELESS REMOTE AND KEY CONTROL CODE	12	IC7501 ← IC6001	FRAME NUMBER CODE
3	IC6001 ← IC7501	TIMER INSTRUCTIONS CODE	13	NOT USED	———
4	IC6001 ← EDIT CONTROLLER	EDIT CONTROLLER INSTRUCTIONS CODE	14	IC6001 ← IC7501	JOG/SHUTTLE CODE
5	IC7501 ← IC6001	TRANSMISSION OF VTR MODE CODE	15	IC6001 ← IC7501	AI SWITCH CONDITION
6	IC7501 ← IC6001	DISPLAY INDICATION CODE (POWER ON/OFF etc.)	16	IC6001 ← IC7501	AUDIO CONDITION CODE
7	IC7501 ← IC6001	COUNTER/TAPE REMAINING CODE	17	IC7501 ← IC6001	PLAY BACK BILINGUAL CONDITION CODE
8	IC7501 ← IC6001	COUNTER/TAPE REMAINING CODE	18	IC6002 ← IC6001	VITC CODE
9	IC7501 ← IC6001	COUNTER/TAPE REMAINING CODE	19	IC6001 ← IC6002	EDIT MICROPROCESSOR INSTRUCTION CODE
10	IC6001 ← IC7501	TIMER CONDITION CODE	20	NOT USED	———

Fig. A6

Precautions

Please read these cautions before you operate this VTR.

Avoid Sudden Changes in Temperature

If the VTR is suddenly moved from a cold place to a warm place, moisture may form on the tape and inside the VTR.

Humidity and Dust

Avoid places where there is high humidity or much dust, which may cause damage to internal parts.

Do Not Obstruct the Ventilation Holes

The ventilation holes prevent abnormal increase in temperature. Do not block or cover these holes. Especially avoid covering the holes with soft materials such as cloth or paper.

Keep away from High Temperature

Keep the VTR away from extreme direct heat such as direct sunlight, heating radiators, or closed automobiles.

Keep Magnets away

Never bring a magnet or magnetized object near the VTR because it will adversely affect the performance of the VTR.

No Fingers or Other Objects Inside

Touching internal parts of this VTR is dangerous, and may cause serious damage to the VTR. Do not attempt to disassemble the VTR. There are no user serviceable parts inside.

Keep Water away

Keep the VTR away from flower vases, tubs, sinks, etc. CAUTION: If liquids are spilled into the VTR, serious damage could occur. If you spill any liquid into the VTR, consult qualified service personnel.

Lightning

To avoid damage by lightning, disconnect the aerial plug from the VTR.

Cleaning the VTR

Wipe the VTR with a clean, dry cloth. Never use cleaning fluid, or other chemicals. And do not use compressed air to remove dust.

Stacking

Place the VTR in a horizontal position, and do not place anything heavy on it.

Video Head Clogging

The video heads place picture signals on the tape during recording and read picture signals from the tape during playback and they are, therefore, of critical importance for the picture quality. If the VTR is used over extremely long periods of time, these heads may still become dirty and clogged. In such a case, the signals can no longer be recorded correctly, and the playback picture will be distorted accordingly. This is the case, for example, during the playback of a tape, the sound is reproduced normally, but no picture is seen, or the picture is greatly distorted. When such a symptom case occurs have the recorder checked by qualified service personnel.

Condensation may form in the VTR if:

- The VTR is in a room when the heater has just been turned on.
- The VTR is in a room with steam or high humidity.
- The VTR is brought from cold surroundings into a well-heated room.
- The VTR is suddenly brought from cool surroundings, such as an air-conditioned room or car, to a place which is hot and humid.

Note:

Do not operate the VTR for at least 1 hour if any of the above conditions occur.

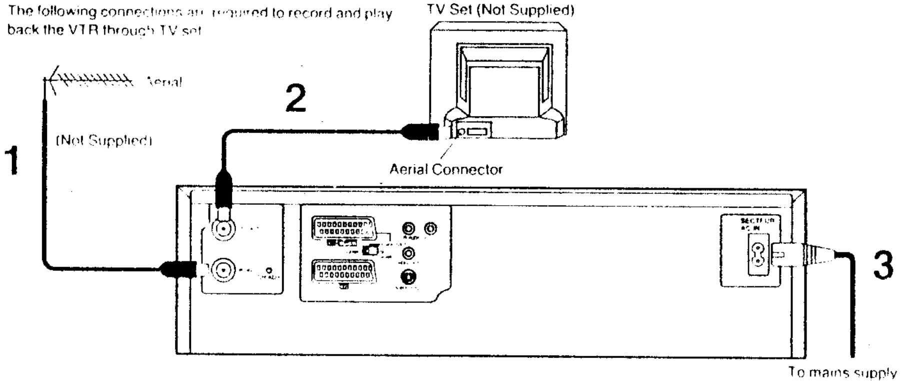
This VTR does not incorporate a dew sensor.

Connections

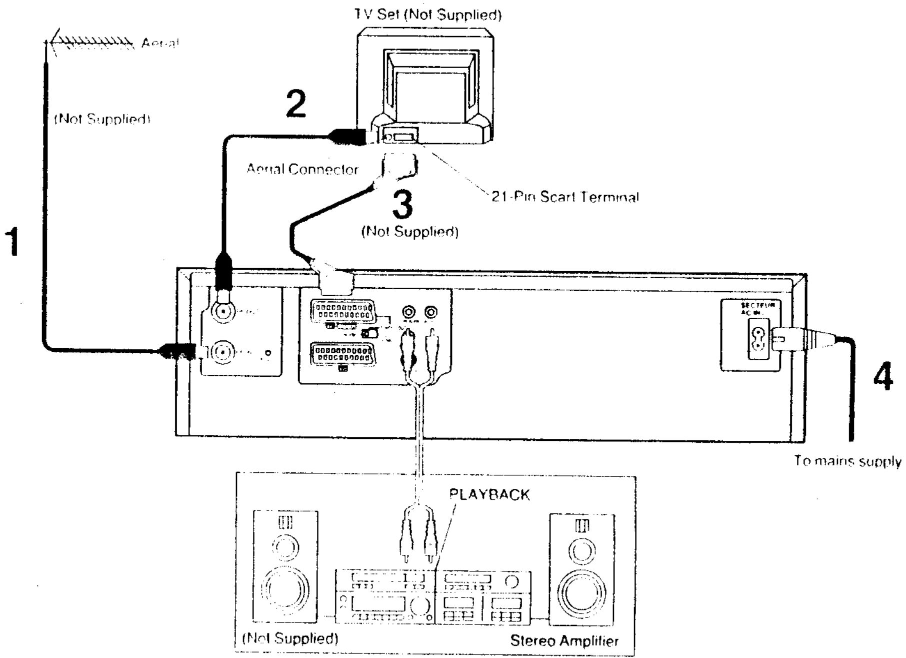
This tells you how to connect with an aerial, TV, etc.

Basic Connections

The following connections are required to record and play back the VTR through TV set.



Connection to a TV Set with 21-Pin Scart Terminal



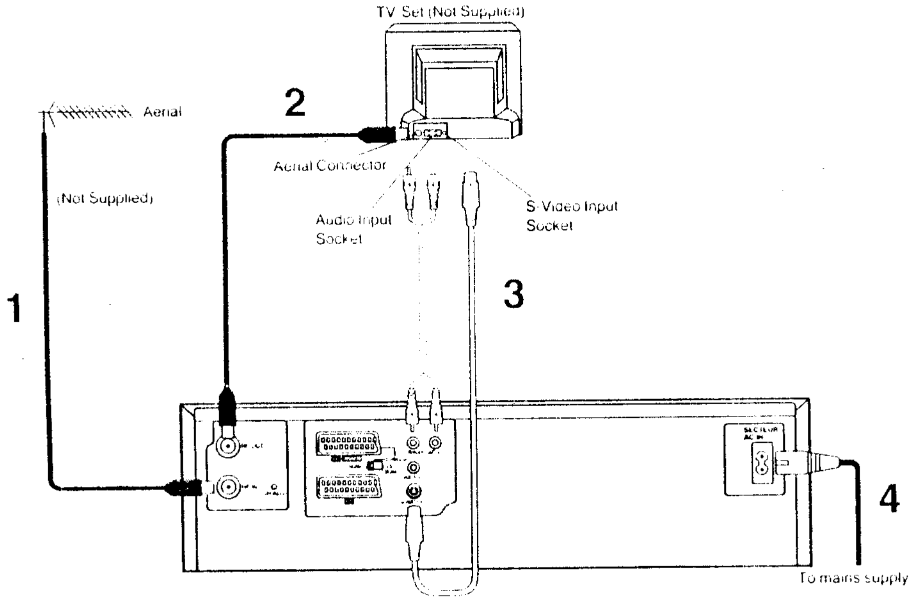
- Connection to a Stereo Amplifier

Connection to a TV Set with S-Video Socket

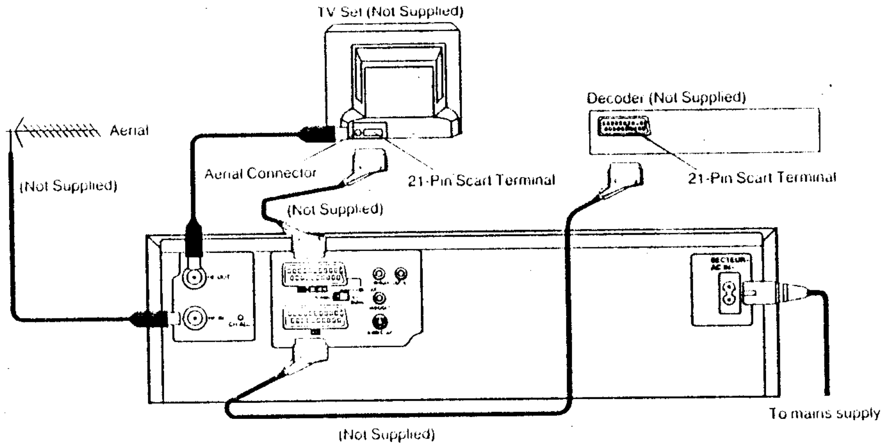
This VTR uses the S-VHS format that makes it possible to obtain high resolution and high picture quality by using the high-performance S-VHS video cassette tapes.

The conventional video sockets of VTRs output (input) a combination of the luminance signal (Y) and colour signal (C) which are recorded on the video tape. The new S (Separate)-Video Socket allows separate transmission of signals in order to obtain clearer pictures.

The connection with the S-Video Cable can also be used for playback of a tape that was recorded in the conventional VHS system. The "S" in the "S-Video Socket" stands for "SEPARATED Y/C" not for "S-VHS".


TV Set (Not Supplied)
Aerial
(Not Supplied)
Aerial Connector
Audio Input Socket
S-Video Input Socket
1
2
3
4
To mains supply

Connection to a Decoder


TV Set (Not Supplied)
Decoder (Not Supplied)
Aerial
(Not Supplied)
Aerial Connector
21-Pin Scart Terminal
21-Pin Scart Terminal
(Not Supplied)
(Not Supplied)
To mains supply

Note:
If the TV set is provided with an RGB compatible connector, connect the 21-pin AV cable from the VTR to this connector. Use full-pin 21-pin AV cables for connecting the TV set and VTR and for connecting the VTR and decoder.

AV LINK

With this button the connected colour TV set can be switched from TV mode to VTR mode (vice versa) when it is connected by means of 21-pin scart cable.

This makes a variety of functions possible, such as simultaneous recording and viewing when a "Premiere" decoder or a satellite receiver has been connected.

VTR mode (VTR indicator lights):
To enjoy sound and pictures from the VTR.

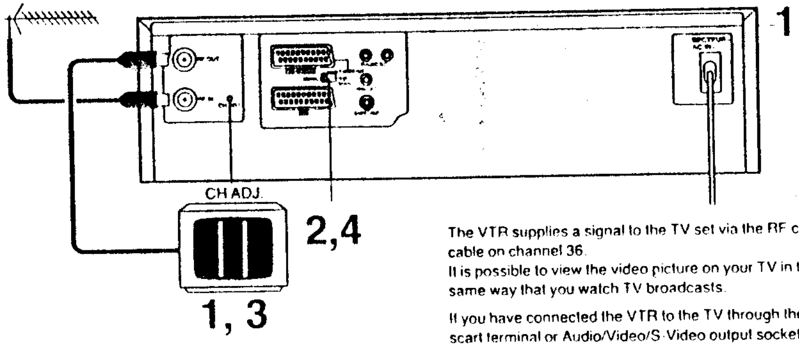
TV mode (VTR indicator goes off):
To watch another programme on the TV while recording on the VTR.

- Select the programme to be watched using the TV set's tuner.
- The sound and pictures of a different channel are received by the VTR.

VTR		TV set
Power On	VTR mode	AV input selected
	TV mode	Input from TV set's tuner*
Power Off	—	Input from TV set's tuner

*When the VTR is set to the TV mode and the Pay TV channel is selected, the signals will still be scrambled even when Pay TV is selected by the TV set's tuner. At a time like this, either set the VTR to the VTR mode or switch the TV set's input signals to AV input.

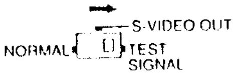
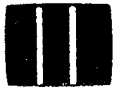
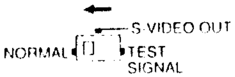
Tuning the TV to your VTR



The VTR supplies a signal to the TV set via the RF coaxial cable on channel 36.
It is possible to view the video picture on your TV in the same way that you watch TV broadcasts.

If you have connected the VTR to the TV through the 21 pin scart terminal or Audio/Video/S-Video output sockets then you do not need to follow the procedure mentioned below.

Operations

1		Turn on the TV and VTR.
2		To generate a test pattern, set **NORMAL/ S-VIDEO OUT/TEST SIGNAL** to TEST SIGNAL.
3		Set the TV to an unused position which you wish to use for your video playback.
4		Set **NORMAL/S-VIDEO OUT/TEST SIGNAL** to NORMAL.

Note:
The test signal is transmitted on video channel 36. If you are encountering interference from a TV broadcast on this video channel, you may readjust to another free channel (32 - 40) by using the **CH ADJ.** screw which is located on the rear of the VTR. When rotating the **CH ADJ.** screw, take care not to turn it too far.
Please note that if the **CH ADJ.** screw is used then you will have to retune your TV to the test signal as in item 2 to 4 above.

Setting the Clock of the VTR

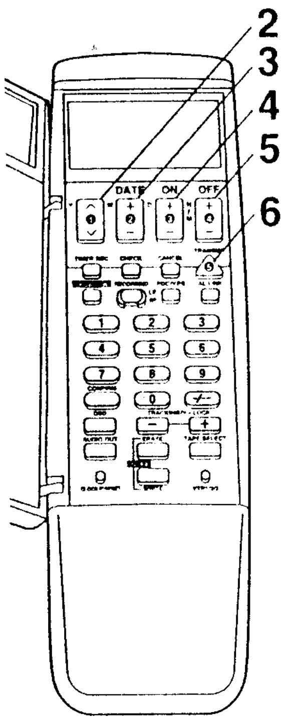
By setting the time on the remote controller's clock and then by transmitting this setting to the VTR, the clocks on both the remote controller and VTR display the same time.
The built-in digital clock employs the 24-hour system.

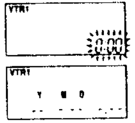
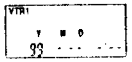
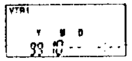
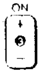
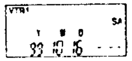
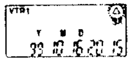
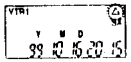
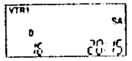
Preparation

- Turn on the VTR.
- Install the batteries in the remote controller. See page 17.

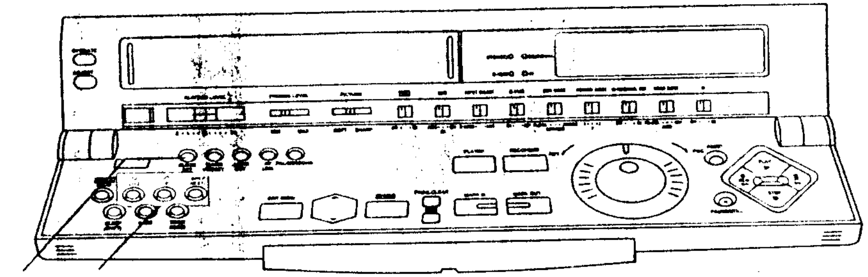
For Example:

Date: 16th, October, 1999
Time: 20 15



Operations		Display Symbols	
1			Open the door of the remote controller.
2			Set **Year** "99".
3			Set **Month** "10".
4			Set **Date** "16".
5			Set **Time** "20:15". • When it is kept pressed, the indication changes in 30-minute steps.
6			Press **TRANSMIT**.
7			Close the door of the remote controller.

Note:
To change the previous clock setting, press **CLOCK/ PRESET** for at least 2 seconds. The previous clock setting will be displayed. Then follow steps **2** to **7** above.



In addition to setting the VTR clock from the remote controller, it can also be set directly from the VTR.
The built-in clock is used to activate the timer for automatic recording and must be set to the correct time.

The built-in digital clock employs the 24-hour system.

Preparation

Turn on the VTR.

For Example:

Date: 16th, October, 1999
Time: 20:15

Operations **Display Symbols**

1 Keep **CLOCK SET** pressed for more than 2 seconds.

2 Set each item by pressing ∧ (+) or ∨ (−) and **SP/LP (NEXT)**.

Set **Year** "99".

Set **Month** "10".

Set **Date** "16".

Set **Hour** "20".

Set **Minute** "15".
- There is no need to press **SP/LP (NEXT)**.

3

Press **CLOCK SET**.
- The clock will start.

Note:
The clock operates for at least 60 minutes by its backup system in the event of power failure.

Time Reset Function

If the clock is less than two minutes slow or fast, it can easily be reset to the proper time.

For example:
Resetting the clock to 12:00:00

1 Keep **CLOCK SET** pressed at any time between 11:58:00 and 12:01:59 for more than 2 seconds.

2 Press **CLOCK SET** again as soon as you hear the 12:00:00 time signal.

Summer Time Function

Setting to summer time
1 Keep **CLOCK SET** pressed for more than 2 seconds.

2 Press **SLEEP (SHIFT)**.
- The time on the clock is advanced by 1 hour.

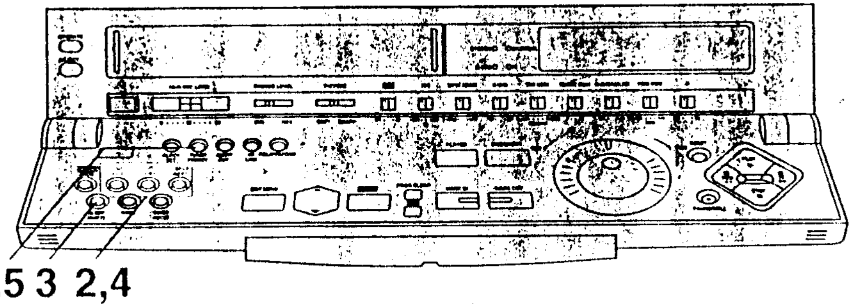
3 Press **CLOCK SET**.

Returning from summer time to standard time
1 Keep **CLOCK SET** pressed for more than 2 seconds.

2 Press **SLEEP (SHIFT)** twice.
- The time on the clock is set back by 1 hour.

3 Press **CLOCK SET**.

Storing TV Broadcasts into your VTR

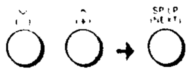


Introduction

The VTR is fitted with its own tuner (just like a normal TV set) and can be pre-set to receive up to 99 TV broadcast stations.

Preparation

- Confirm that the TV is on and the VTR viewing channel is selected.
- Turn on the VTR and Select the programme position except A1, A2 and A3.

Operations	Display Symbols	
1		Keep **TUNER PRESET** pressed for more than 2 seconds.
2 		Select the programme position, then press **SP/LP (NEXT)**.
3		Select normal TV station or DBS station. •1 (DBS off): To preset normal TV stations. •2 (DBS on): To preset DBS stations such as Pay TV (Premiere)
4		Search for the required TV station. •Press **PAL/MESECAM** to select the broadcasting system for the TV station to be tuned. PAL: MESECAM indicator should not be lit. SECAM: MESECAM indicator should be lit. •Press **SP/LP (NEXT)** and repeat steps **2–4** for each programme position you want to tune to a station.
5		Press **TUNER PRESET** twice.

Direct Channel Input Tuning Procedure

If you know the channels on which the TV stations can be received, the TV stations can be tuned in by following the steps given below.

1 Keep **TUNER PRESET** pressed for more than 2 seconds.

2 Select the programme position by using ∧ (+) or ∨ (–), then press **SP/LP (NEXT)**.

3 Select normal TV station or DBS station by pressing **SLEEP (SHIFT)**.
- 1: To preset normal TV stations.
- 2: To preset DBS stations.

4 Input the channel number for the required TV station by using Number buttons on the remote controller.
- Press **PAL/MESECAM** to select the broadcasting system for the TV station to be tuned.
  PAL: MESECAM indicator should not be lit.
  SECAM: MESECAM indicator should be lit.
- Press **SP/LP (NEXT)** and repeat steps **2–4** for each programme position you want to tune to a station.

5 Press **TUNER PRESET** twice.

Fine Tuning Procedure

1 Keep **TUNER PRESET** pressed for more than 2 seconds, and then press again.

2 Press **SP/LP (NEXT)**.

3 Press ∧ (+) or ∨ (–) to obtain the best tuning condition.
- "AFC" Indicator disappears.
- To return the tuning to its former state, press **SLEEP (SHIFT)**.

4 Press **TUNER PRESET**.

Blanking of Unoccupied Programme Positions

1 Keep **TUNER PRESET** pressed for more than 2 seconds.

2 Select a programme position which you do not want to tune to a TV station, by using ∧ (+) or ∨ (–).

3 Press **SLEEP (SHIFT)**. ("– –" is displayed.)
- Repeat steps **2** and **3** for another unoccupied programme positions to skip during the selection of the programme positions.
- To cancel the blanking of a programme position, select that programme position on the VTR and then press **SLEEP (SHIFT)**.

4 Press **TUNER PRESET** twice.

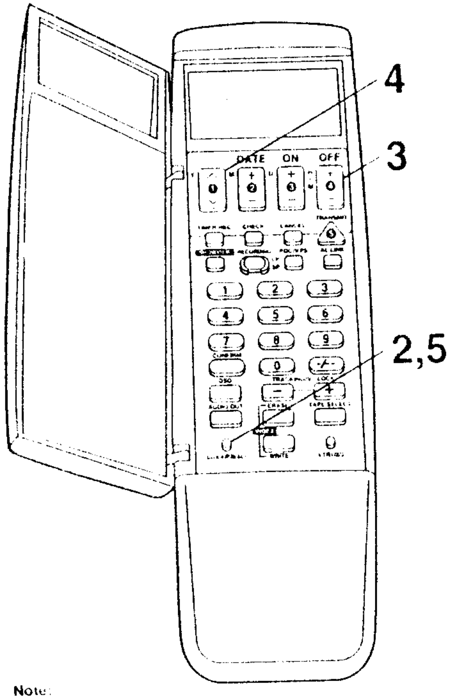
Channel Plan

Channel Indication	TV Channel	
	Germany/Italy	Other Countries
2–12	*E2–E12	E2–E12
13–20	A–H (Only Italy)	------
21–69	21–69	21–69
74–76	——	S1–S3
80–82	——	M1–M3
83–89	S4–S10	M4–M10
90–99	S11–S20	U1–U10
121–141 Hyperband	**S21–S41	S21–S41

*In Italy: H1...(11), H2...(12)
**Only for 8 MHz channel raster

Setting Up the Remote Controller for the ShowView Programming

This remote controller uses specially designated numbers called "guide numbers" to differentiate between the TV stations. Before programming using the ShowView numbers, you must enter the guide numbers of the TV stations to be viewed and the programme positions at which those TV stations are received on the VTR into the remote controller. Have a newspaper or magazine at hand which lists the TV station guide numbers and ShowView numbers.



Note:
To receive satellite stations, the satellite receiver must be connected to the VTR and programme position must be set depending on the type of the connection made.

A1: When the satellite receiver is connected to the AV1 socket

A2: When the satellite receiver is connected to the AV2 socket

A3: When the satellite receiver is connected to the Audio/Video input sockets (AV3)

- When the satellite receiver is connected by means of the RF coaxial cable, set to a free programme position between 1 and 99.

Preparation

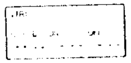
Set the clock of the remote controller first.

For Example:

TV Station	Guide Number	Programme Position
ARD	001	1
ZDF	002	2
RTL	004	4
SAT1	005	3

Operations **Display Symbols**

1 Open the door of the remote controller.



2 Keep **CLOCK/PRESET** pressed for more than 2 seconds and then press it again.

CLOCK/PRESET

3 Select the guide number (001 - 255).

4 Select the programme position (1 - 99, A1 - A3).

- To set the other TV stations, repeat steps 3 and 4.

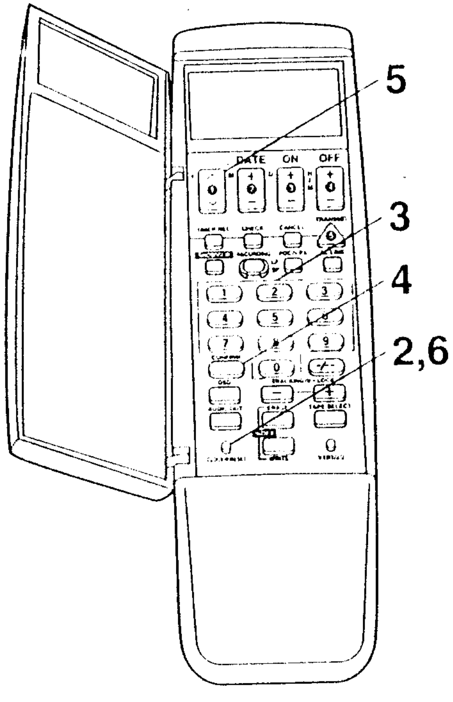
5 Press **CLOCK/PRESET** twice.

CLOCK/PRESET

6 Close the door of the remote controller.

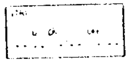
If you do not know the Guide Number of a TV Station

You can set it by figuring it out from the ShowView number for the programme broadcast by that station.



Operations **Display Symbols**

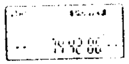
1 Open the door of the remote controller.



2 Keep **CLOCK/PRESET** pressed for more than 2 seconds and then press it again.

CLOCK/PRESET

3 Enter a ShowView number.
Example: 744286



- If you have entered the wrong number, press **CANCEL** and then enter the proper number.

4 Press **CONFIRM** to set the guide number.

5 Select the programme position (1 - 99, A1 - A3).

- To set the other TV stations, repeat steps 3 to 5.

6 Press **CLOCK/PRESET** twice.

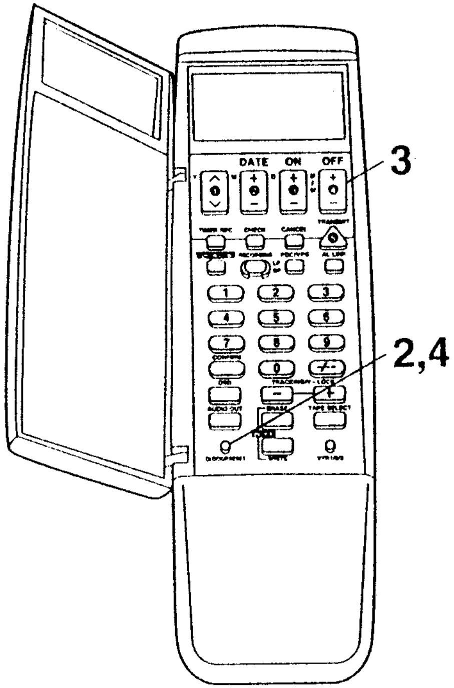
CLOCK/PRESET

7 Close the door of the remote controller.

Note:
Enter ShowView numbers which are ahead of the present time. Otherwise, they will not be set into the proper guide numbers.

Setting the Remote Controller for Operation of your TV

You can operate some manufacture of TVs (see table below) using the supplied remote controller after this setting up.



Number	Manufacturer
1	Panasonic
2	
3	
4	
5	GRUNDIG/Blaupunkt
6	PHILIPS
7	SONY

Preparation
- Turn on the TV.
- Install the batteries in the remote controller.

Operations **Display Symbols**

1 Open the door of the remote controller.

2 Keep **CLOCK/PRESET** pressed for more than 2 seconds and then press it twice.

CLOCK PRESET
TV

- "TV" now appears on the remote controller's display

3 Press **OFF** several times.

- When the number matches the manufacturer of your TV, the TV's power is turned off

4 Press **CLOCK/PRESET**.

CLOCK PRESET
VTR1

5 Close the door of the remote controller.

When the number is 1, 2, 3 or 4:
When the TV's power is turned off in step 3 above, turn it back on and adjust the TV's volume using this remote controller. The volume can be adjusted if the number matches the manufacturer of TV. If it is not possible to adjust the TV's volume, try setting the number (1 to 4) to match the manufacturer of TV again until the volume can be adjusted.

Note:
Some TV models cannot be operated using this remote controller.

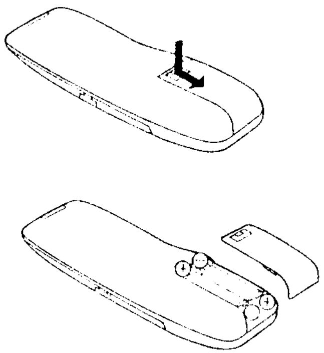
Power Source for the Remote Controller

The remote controller is powered by 2 "UM3" or "R6" size batteries. The life of the batteries is about one year, although this depends on the frequency of use.

Precautions for Battery Replacement

- Load the new batteries with their polarity (⊕ and ⊖) aligned correctly.
- Do not apply heat to the batteries, or an internal short-circuit may occur.
- If you do not intend to use the remote controller for a long period of time, remove the batteries and store them in a cool and dry place.
- Remove spent batteries immediately and dispose of them.
- Do not use an old and a new battery together, and never use an alkaline battery with a manganese battery.

Installing the Batteries



S-VHS DETECTION PACK C.B.A. TRANSISTORs DC VOLTAGE CHART

INPUT SIGNAL	PLAY BACK TAPE	TV SYSTEM SELECT	MODE	REF NO.	Q3701			Q3702			Q3703			Q3704			Q3705			Q3706		
				PIN NO.	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
NTSC		PAL	REC		0	0.2	0.1	0	0.2	0	0.2	0	0.1	0	0.2	0.2	0.2	0	0	0.2	0	0.1
	PAL	NTSC	PLAY		1.6	4.8	2.4	0.9	4.8	1.6	2.0	0	1.5	1.7	4.8	2.0	2.3	0	1.7	2.3	0	2.2
PAL		SECAM	REC		0	0.2	0.1	0	0.2	0	0.2	0	0.1	0	0.2	0.2	0.2	0	0	0.2	0	0.1
	SECAM	PAL	PLAY		1.6	4.8	2.4	0.9	4.8	1.6	0	0	1.5	1.7	4.8	2.0	2.3	0	1.7	2.3	0	2.2

INPUT SIGNAL	PLAY BACK TAPE	TV SYSTEM SELECT	MODE	REF NO.	Q3707			Q3708			Q3709			Q3710			Q3711			Q3712		
				PIN NO.	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
NTSC		PAL	REC		0	0.2	0.4	0.2	0	0.1	0	0.2	0.2	0	0.2	0.2	0	0.2	0.1	0	0.2	0.2
	PAL	NTSC	PLAY		1.9	4.8	2.6	2.5	0	1.8	1.7	3.1	2.5	2.4	4.8	3.1	0.4	2.8	1.1	2.1	4.8	2.8
PAL		SECAM	REC		0	0.2	0.4	0.2	0	0.1	0	0.2	0.2	0	0.2	0.2	0	0.2	0.1	0	0.2	0.2
	SECAM	PAL	PLAY		1.9	4.8	2.6	2.5	0	1.8	1.7	3.1	2.5	2.4	4.8	3.1	0.4	2.8	1.1	2.1	4.8	2.8

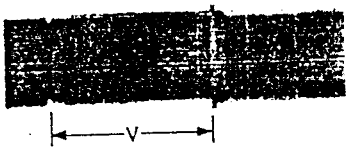
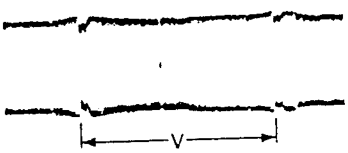
INPUT SIGNAL	PLAY BACK TAPE	TV SYSTEM SELECT	MODE	REF NO.	Q3715		
				PIN NO.	E	C	B
NTSC		PAL	REC		0	0.2	0
	PAL	NTSC	PLAY		3.2	4.8	0
PAL		SECAM	REC		0	0.2	0
	SECAM	PAL	PLAY		3.2	4.8	0

INPUT SIGNAL	PLAY BACK TAPE	TV SYSTEM SELECT	MODE	REF NO	QR3701			QR3702		
				PIN NO	E	C	B	E	C	B
NTSC		PAL	REC		4.9	0	4.9	0	4.9	0
	PAL	NTSC	PLAY		4.9	0	4.9	0	4.9	0
PAL		SECAM	REC		4.9	0	4.9	0	4.9	0
	SECAM	PAL	PLAY		4.9	0	4.9	0	4.1	0

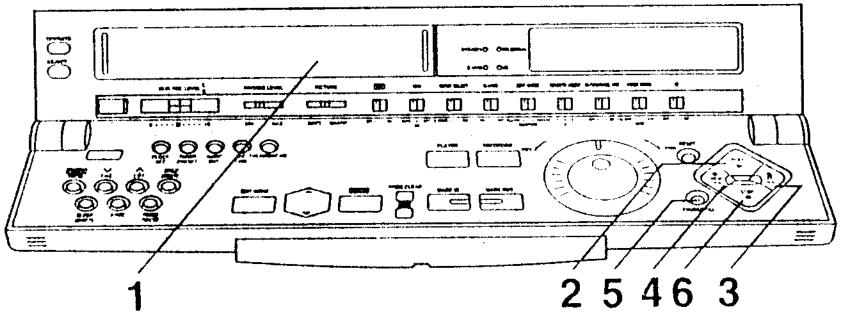
S-VHS DETECTION PACK C.B.A. ICs DC VOLTAGE CHART

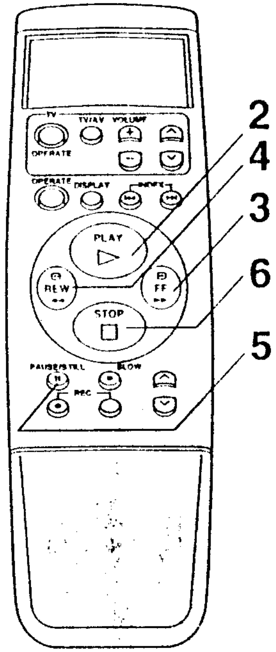
INPUT SIGNAL	PLAY BACK TAPE	TV SYSTEM SELECT	MODE	REF NO.	IC3701													
				PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
NTSC		PAL	REC		2.4	2.3	4.9	0	0.1	4.9	0	4.8	0	0	4.8	0	0	4.9
	PAL	NTSC	PLAY		2.4	2.3	4.9	0	0	4.9	0	4.9	0	0	4.9	0	4.9	4.9
PAL		SECAM	REC		2.4	2.4	4.9	0	0	4.9	0	4.8	0	0	4.8	0	4.9	4.9
	SECAM	PAL	PLAY		2.4	2.3	4.9	0	0	4.9	0	4.9	0	0	4.9	0	4.9	4.9

WAVEFORM OF
S-VHS DETECTION PACK PINS

PIN NO.	WAVEFORM
2	 PLAY (VHS) 0.3Vp-p
10	 PLAY (S-VHS) 1.5Vp-p

Playback





Operations	Display Symbols	
1		Insert a recorded cassette tape.
2 PLAY ▷	▷	Start viewing the picture.
3 FF ▸▸	▷▷	Search forward by tapping FF. • To change back to normal playback, press PLAY.
4 REW ◂◂	◁◁	Search backward by tapping REW. • To change back to normal playback, press PLAY.
5 PAUSE/STILL	▯▯	View a still picture. • To continue the normal playback press PLAY or PAUSE/STILL.
6 STOP □		Stop viewing the picture.

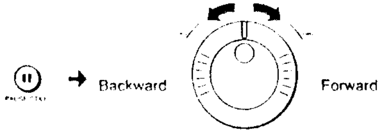
Other Playback Functions

To change the Playback Speed

Using Shuttle Ring:

1 Press **PAUSE/STILL** on the VTR.

2 Rotate Shuttle Ring.



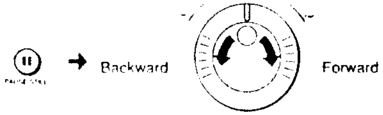
Using Remote Controller:
Press **SLOW** during playback to activate slow playback.

SLOW

To locate the Desired Picture exactly

1 Press **PAUSE/STILL** on the VTR.

2 Turn Jog Dial.



To obtain High Speed Picture during Fast Forward or Rewind

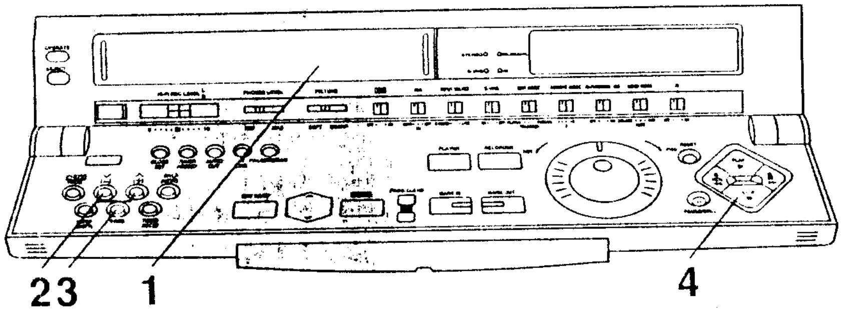
Keep **FF** pressed during fast forward
Keep **REW** pressed during rewind

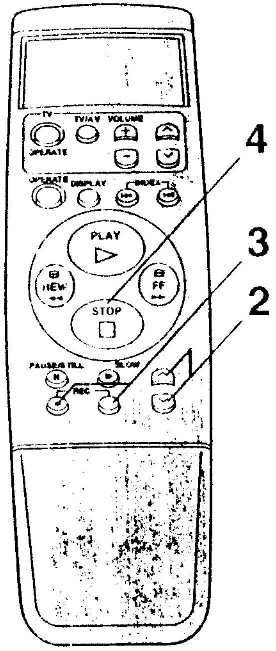
REW ◂◂ FF ▸▸

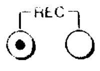
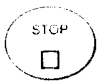
Note:

- During Playback, set **PAL/MESECAM**.
  PAL: When playing back a tape recorded in the PAL system
  MESECAM: When playing back a tape recorded in the MESECAM system
  MESECAM Indicator lights up.
- Audio reproduction of linear (conventionally recorded) tapes will be monaural when played back on the FM Hi-Fi video recorders.
- Cue or review playback will be automatically released after 10 minutes, and still or slow playback after 5 minutes.

On-the-spot Recording




4
3
2
TV
TV/AV
VOLUME
OPERATE
DISPLAY
PLAY
REW
FF
STOP
PAUSE/STILL
SLOW
REC

	Operations	Display Symbols	
1			Insert a cassette tape. • If it has already been inserted, press **OPERATE** to turn the VTR on.
2			Select TV station.
3			Start recording.
4			Stop recording.

To select the Desired Tape Speed

Press **SP/LP** before recording.

To interrupt Recording

Press **PAUSE/STILL** during recording.
Press again to continue recording.

PAUSE STILL

To record One TV Programme while Viewing Another Programme

1 Refer to the on-the-spot recording operations steps 1 to 3.

2 Select the TV programme on your TV set you wish to view at the present time.

To display the Approximate Remaining Tape Time

1 Press **TAPE SELECT** to select the corresponding cassette tape length.

TAPE SELECT
E 195

E195 For E30, 60, 80, 120, 180 and 195 tapes
E240 For E240 tape
E260 For E260 and 300 tapes

2 Press **DISPLAY**

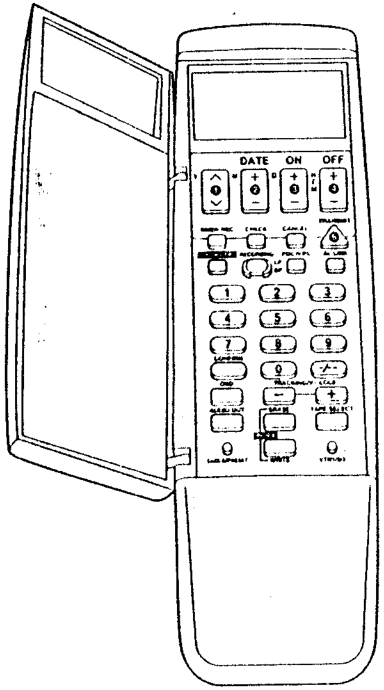
DISPLAY
1:05

·Clock ·Counter ·Remaining Tape Time

Recording of Stereo and Bilingual Programmes

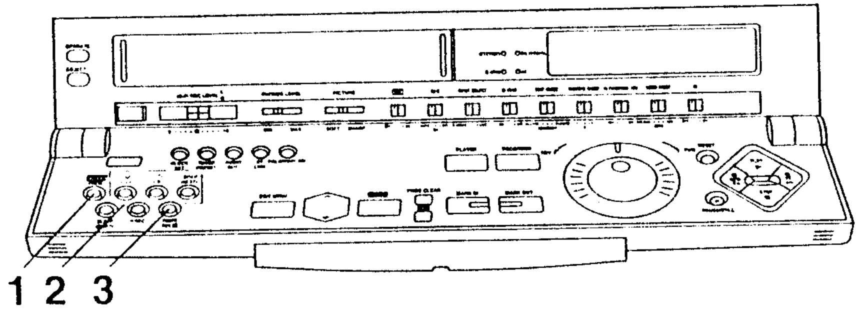
1 Recordings are automatically made in the stereo or bilingual mode. This prevents [illegible] in the selection of the dubbed or the original language.

2 During playback press **AUDIO OUT** to select the desired language. See page 50.


DATE
ON
OFF
1
2
3
4
5
6
7
8
9
0
TAPE SELECT

Notes:
- When a video cassette with a broken off tab is inserted the "▣" indication will flash to indicate that recording is not possible.
- The recording pause mode will be automatically released after 5 minutes, and be back to the stop mode.

Timer Recording



Up to 8 timer programmes can be recorded up to one month in advance by setting the timer, including daily and weekly programmes.

Preparation

Insert a cassette tape with an intact erasure prevention tab.

For Example:

Timer programme number:	1
Programme position (channel):	2
Date:	27th, October
Starting time:	20 02
Ending time:	21 30
(present date: 16th October)	

Operations **Display Symbols**

1

Select **Timer programme number** "1".

2 Set each item by pressing ∧ (+) or ∨ (−) and **SP/LP (NEXT)**.

Set **Programme position** (channel) "2".

Set **Date** "27".
- For daily and weekly recording, see next page.

Set **Starting time** (hour) "20".

Set **Starting time** (minute) "02".

Set **Ending time** (hour) "21".

Set **Ending time** (minute) "30".
- There is no need to press **SP/LP (NEXT)**.

3

To activate timer recording, press **TIMER REC**.

Setting for Daily and Weekly Timer Recording

In the Date setting step, press ∨ (−) repeatedly until the desired day (days) is displayed.

Daily recording From Sunday to Saturday	SU MO TU WE TH FR SA
From Monday to Saturday	MO TU WE TH FR SA
From Monday to Friday	MO TU WE TH FR
Weekly recording For example, Sunday	SU

Timer Recording from External Signal Source

If Timer Recording is performed by a unit connected to the AV1/AV2 Socket or the Audio/Video/S-Video input sockets, select the A1, A2 or A3 indicator for the programme position.

A1: Through the AV1 socket
A2: Through the AV2 socket
A3: Through the AV3 sockets on front panel
Set **INPUT SELECT** on the VTR.
S-VIDEO: Through the S-VIDEO IN and AUDIO IN sockets
LINE: Through the VIDEO IN and AUDIO IN sockets

Selecting the Desired Tape Speed

After step 2, press **SP/LP (NEXT)** and select SP or LP by pressing ∧ (+) or ∨ (−).

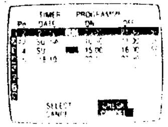
Setting other Programmes in Succession

Repeat steps 1 and 2.

Checking a Timer Programme

Select the timer programme number to be checked by pressing **CHECK/PROG**.

On Screen Display

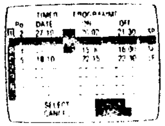


Cancelling a Timer Programme

1 Press **TIMER REC** to turn off the timer recording function.

2 Select the timer programme number to be canceled by pressing **CHECK/PROG**.

3 Press ∧ (+) and ∨ (−) simultaneously for more than 3 seconds.



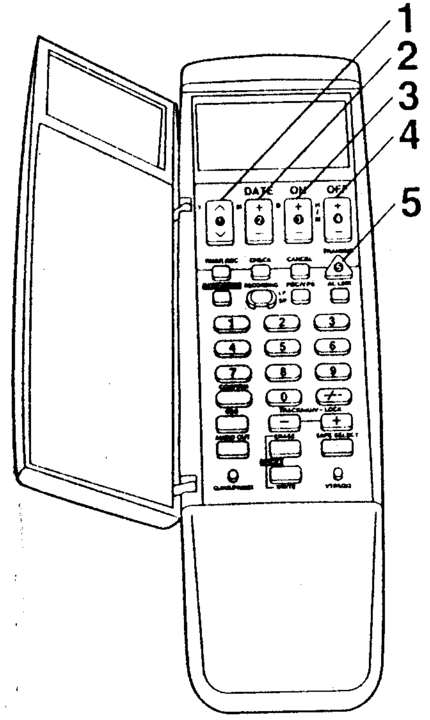
PDC (Programme Delivery Control)/VPS (Video Programme System)

The Programme Delivery Control (PDC) or the Video Programme System (VPS) is a very convenient system which assures that the TV programmes you have programmed for timer recording will be recorded exactly from beginning to end, even if the actual broadcasting time differs from the scheduled time due to delayed start or extension of the programme duration. Also, if a programme is interrupted and, for example, some special news are inserted, the recording will also be interrupted automatically and resumed when the programme continues.

- This model is equipped with VPS function. The PDC function becomes operative when the VTR is equipped with the optional PDC decoder. Consult your authorized video dealer.
- Press **SLEEP (SHIFT)** in step **2** to cancel the PDC/VPS function.
- In the case of PDC/VPS recording, use the **correct** time (PDC/VPS time) for recording the TV programmes. PDC/VPS recording is not performed when the time (PDC/VPS time) is incorrect, even if only by one minute.
- If the actual broadcasting times of timer recordings overlap (regardless of whether they are PDC/VPS controlled), the recording that starts first has always priority, and the recording of the later beginning programme will start only after the first timer recording has finished.
- When the PDC/VPS signal drops out because the broadcast signal is weak, or when a broadcasting station does not transmit a regular PDC/VPS signal, the timer recording will be performed in the normal mode (without PDC/VPS) even if it was programmed for PDC/VPS.
In this case, even if the timer recording is performed, whatever has been programmed will not be cancelled at that particular time but at 4 a.m. on the following day.

Note:
If a timer recording is not performed to the end (due to insufficient tape or cancellation by the user), the programmed timer recording data will be cancelled from the memory by 4 a.m. two days later.
However, if the Timer Record Function is activated at that time, the programmed timer recording data will be cancelled at 4 a.m. the next day.

Using the Remote Controller



Preparation

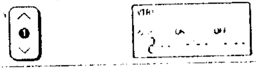
- •Insert a cassette tape with an intact erasure prevention tab.
- •Open the door of the remote controller

For Example:

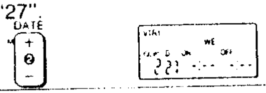
Programme position (channel);	2
Date;	27th, October
Starting time;	20 02
Ending time;	21:30

Operations — Display Symbols

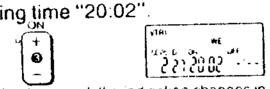
1 Set Programme position (channel) "2".



2 Set Date "27".

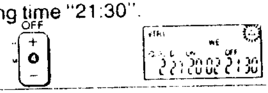


3 Set Starting time "20:02".



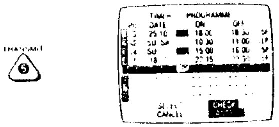
•When it is kept pressed, the indication changes in 30-minute steps.

4 Set Ending time "21:30".



5 Press **TRANSMIT**.

On Screen Display



6 Close the door of the remote controller.

Daily Timer Recording

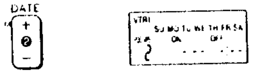
For this timer function, several groups of days can be selected

Ⓐ Daily recording from Sunday to Saturday

Ⓑ Daily recording from Monday to Saturday

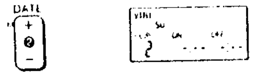
Ⓒ Daily recording from Monday to Friday

In step **2**, select the desired days by pressing **DATE** –.
For Example. Ⓐ



Weekly Timer Recording

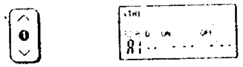
In step **2**, select the desired day by pressing **DATE** –.
For example. SU (Sunday)



Timer Recording from External Signal Source

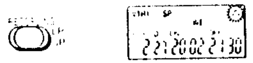
If Timer Recording is performed by a unit connected to the AV1/AV2 Socket or the Audio/Video S-Video input sockets, select the A1, A2 or A3 indicator in step 1 for the programme position.

A1 Through the AV1 socket
A2 Through the AV2 socket
A3 Through the AV3 sockets on front panel
Set **INPUT SELECT** on the VTR.
S-VIDEO. Through the S-VIDEO IN and AUDIO IN sockets
LINE: Through the VIDEO IN and AUDIO IN sockets



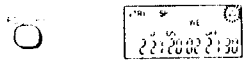
Selecting the Desired Tape Speed

Press **RECORDING SP/LP** in any of steps **2**-**4**



Turning PDC/VPS Function On and Off

Press **PDC/VPS** in any of steps 2-4

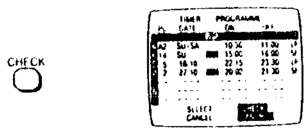


Checking a Timer Programme

•The VTR must be turned on, or the timer recording indicator "⊡" is lit.

Press **CHECK**.

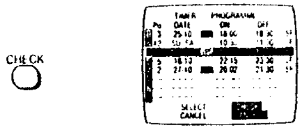
On Screen Display



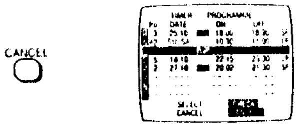
Cancelling a Timer Programme

•The VTR must be turned on, or the timer recording indicator "⊡" is lit.

1 Press **CHECK** repeatedly to select the desired timer programme number.



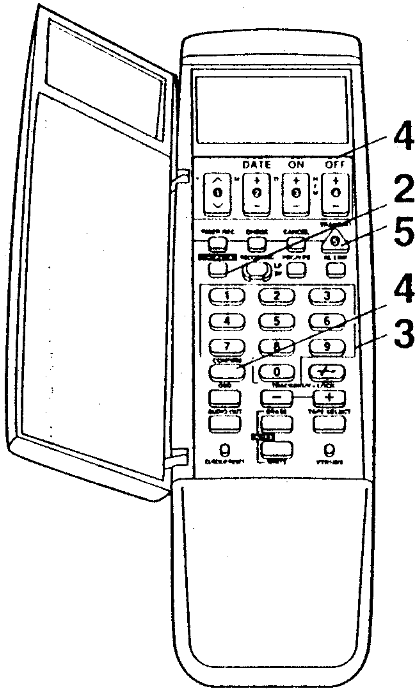
2 Press **CANCEL**.



Other Functions

ShowView Programming

Programming is now easier than ever: simply enter the ShowView number provided in the programme schedule column carried by newspapers and magazines.
ShowView numbers are numbers which are assigned to each programme listed in the TV programme schedule carried in newspapers and TV guides. When these numbers are entered and **TRANSMIT** is pressed, the numbers are converted into the actual programming and sent to the VTR.



Preparation

- Insert a cassette tape with an intact erasure prevention tab.
- Set the programme positions on both the VTR and remote controller as shown on pages 12–15.

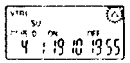
Operations — Display Symbols

1 Open the door of the remote controller.

2 Press **SHOWVIEW**.

3 Enter a ShowView number.
Example: 920216

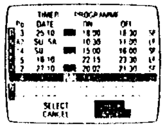
4 Press **CONFIRM** to check that the number corresponds to the right programme.



- To make any corrections, use buttons ⓪–⑨.

5 Press **TRANSMIT**.

On Screen Display



6 Close the door of the remote controller.

Notes:
- To select the desired tape speed, press **RECORDING SP/LP** in any of steps 3–4.
- To cancel the PDC/VPS function, press **PDC/VPS** in any of steps 2–4.
- When the ShowView number is used for programming, the recording time may be slightly longer than the actual programme time.
- Repeat steps 2 to 4 if "Err" appears on the remote controller.
- When programming two or more programmes, repeat steps 2 to 5.
- The procedures for checking and cancelling whatever has been programmed are the same as for remote control programming.

VHS Index Search System

It is very easy to find the beginning of each recording, because a special index signal is recorded at the start of each recorded segment on the tape.

For example:
Searching for the 2nd recorded segment in the forward direction.
Press **INDEX ▶▶I** twice.

- After finding the specific recorded segment, playback starts automatically.
- For the reverse direction, press **INDEX I◀◀**.
- Up to 20 programmes can be searched for in both directions.

Recording Index Signals
Index signals are recorded in following cases.
WRITE indicator appears on the Display.
- When a recording is started by pressing **REC**.
- When **REC** is pressed during recording.
- When timer recording is activated.
- When **WRITE** is pressed during playback.

Erasing Index Signals
1 Search the Index signal to be erased by pressing **INDEX ▶▶I** or **I◀◀**.
- Be sure not to omit this step. Otherwise, this function may not work correctly.

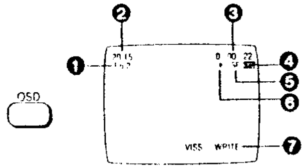
2 Press **PAUSE/STILL** when playback starts.

3 Press **ERASE**.
- Erasing is possible during playback if **ERASE** is pressed during the five seconds following the index signal.

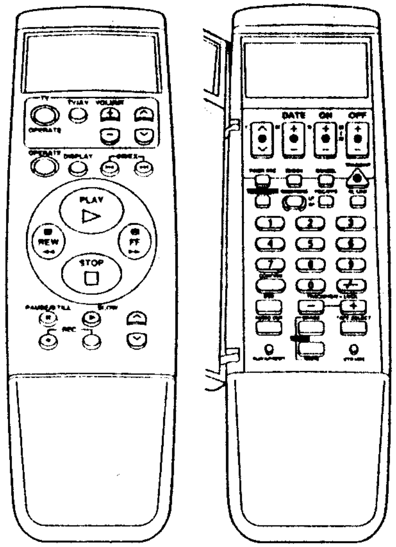
Notes:
- The index search function can only work correctly, if the index signals are spaced at least 3 minutes apart in the SP mode and 5 minutes apart in the LP mode.
- Index signals can not be recorded or erased on a video cassette with a broken off tab.

On Screen Display

Press **OSD** to make the On Screen Display appear on the TV screen.
- To make this display disappear, press **OSD** again.



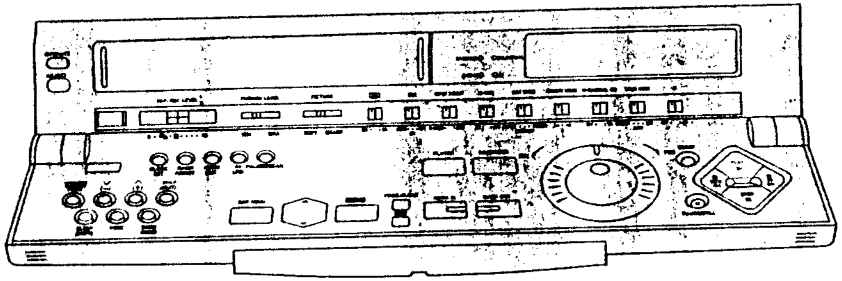
Note:
On Screen Display will not appear during NTSC playback.



❶ Programme position
❷ Present time
❸ Tape counter
❹ Cassette-in indicator
❺ Tape speed indicator
❻ Tape running display

Stop, Eject	■
Rewind, Review	◀◀
Fast Forward, Cue	▶▶
Playback	▶
Reverse Playback	◀
Still Playback	II
Recording, Insert, Audio Dubbing	●
Recording Pause, Insert Pause, Audio Dubbing Pause	II●
Slow Playback	I▶
Reverse Slow Playback	◀I

❼ Index signal writing or erasing indicator



Automatic VTR Off Time Setting

Press **SLEEP** for the desired time.

SLEEP SHIFT
OFF
0:30

- Each press gives a 30 minutes time span up to 9 hours.
- To cancel the setting time, press **SLEEP** repeatedly to set 0:00.

NTSC Playback

Tapes recorded in the NTSC system can be played back with this VTR via a PAL system TV set.

- The playback picture may roll up or down. If the TV set is equipped with a V-HOLD control, it may be possible to stop the picture movement by adjusting this control.
- Depending on the TV set used, the picture may be in black and white. However, this is not an indication of a malfunction.

Other Automatic Functions

Automatic Playback

When a cassette without an erasure prevention tab is inserted, the VTR starts playback automatically.

VTR-off Playback

When the VTR is off, an inserted cassette can be played back by pressing **PLAY**.

Automatic Rewinding

When the tape reaches its end during recording (except for timer recording) or playback, it will automatically be rewound to the beginning.

Automatic Switching Off and Ejection

When the VTR is switched off, an inserted cassette can be ejected simply by pressing **EJECT**. The VTR will eject the cassette and automatically turn itself off again.

Editing Preparation

This VTR is equipped with programme editing functionality. If connected via edit cable to another VTR or a movie camera, it is possible to control such functions as tape playback and editing.

Connections

Connecting This VTR with Another Identical One

- Connect the two VTRs with an edit cable.
- Connect the AV1 socket on the recording VTR to the TV.
- Connect the AV1 socket on the playback VTR to the AV2 socket on the recording VTR.
- Select A2 by pressing ∧ ∨ on the recording VTR.
- Set **EDIT MODE** to PASSIVE on the playback VTR, and to RECORDER on the recording VTR.
- Control is performed by the recording VTR.

Using This VTR as the Recording VTR

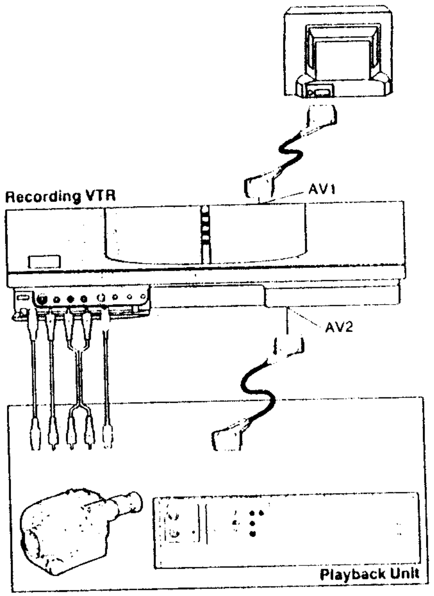
- Connect this VTR to the playback unit with an edit cable.
- Connect the AV1 socket on this VTR to the TV.
- Connect the AV2 socket or the AUDIO/VIDEO/S-VIDEO IN (AV3) sockets on this VTR to the playback unit.
- Select A2 or A3 by pressing ∧ ∨ on this VTR.

A2: Through the AV2 socket
A3: Through the AV3 sockets on front panel
Set **INPUT SELECT** on this VTR.
S-VIDEO: Through the S-VIDEO IN and AUDIO IN sockets
LINE: Through the VIDEO IN and AUDIO IN sockets

- Set **EDIT MODE** on this VTR to RECORDER.
- Control is performed by this VTR.

Using This VTR as the Playback VTR

- Connect this VTR to the recording unit with an edit cable.
- Connect the AV1 socket on this VTR to the TV.
- Connect the AV2 socket on this VTR to the recording unit.
- Select A2 by pressing ∧ ∨ on this VTR.
- Set the input switch on the recording unit to AV.
- Set **EDIT MODE** on this VTR to PLAYER.
- Control is performed by this VTR.



Notes:

- When connecting a VTR or movie camera which does not have an edit socket, see page 48.
- During editing operations, operate using this VTR, do not operate the other unit.
- When this VTR is used as the playback VTR, it may not be possible to perform editing operations properly depending on the type of the recording VTR. In such a case, use this VTR as the recording VTR.
- When a movie camera is connected, operating this VTR will not facilitate reverse playback or reverse slow playback on the movie camera.
- When **EDIT MODE** on this VTR is set to PASSIVE, operation will not be possible, and the On Screen Display will not appear.
- When making a connection using an edit cable, disconnection of the AC mains lead on this VTR may result in erroneous display patterns on the other unit.
- When operating the Jog Dial and Shuttle Ring, it is only possible to reset the tape counter of the other unit during still playback.
- The supplied edit cable cannot be used to connect two other VTRs with edit sockets.
- The On Screen Display does not appear when no input signals are supplied from another unit or when a non-recorded cassette is played.
- The On Screen Display may appear distorted if the picture is affected by noise.

Editing Functions

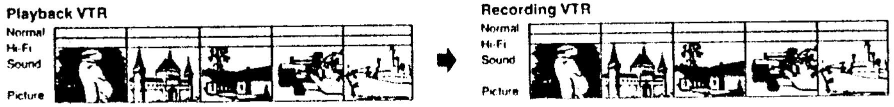
Using this VTR, 4 types of manual editing and 4 types of programme editing can be selected.
In programme editing, after programming up to 10 scenes for each type, editing can be performed automatically.

Manual Editing
- Copying
- Insert Editing
- AV Insert Editing
- Audio Dubbing

Programme Editing
- Assemble Editing
- Insert Editing
- AV Insert Editing
- Audio Dubbing

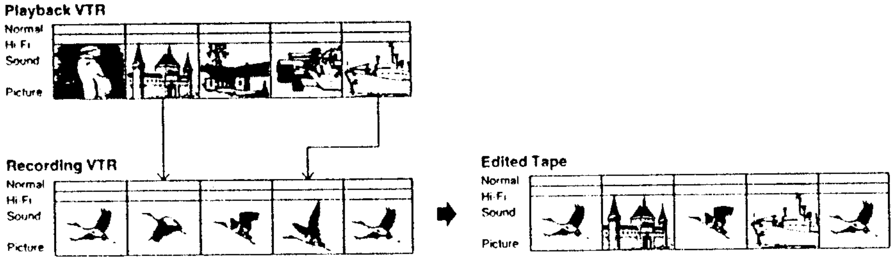
Copying

Allows the re-recording (copying) of the picture and sound from one tape onto another tape.


Playback VTR
Normal
Hi-Fi
Sound
Picture
Recording VTR
Normal
Hi-Fi
Sound
Picture

Insert Editing

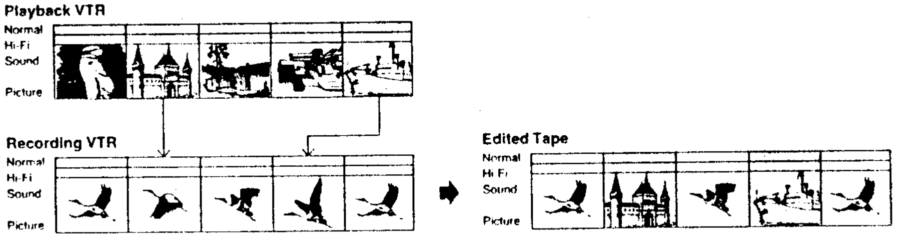
Allows the partial replacement of the picture and Hi-Fi sound on a recorded tape. Normal sound is left in its original state.


Playback VTR
Normal
Hi-Fi
Sound
Picture
Recording VTR
Normal
Hi-Fi
Sound
Picture
Edited Tape
Normal
Hi-Fi
Sound
Picture

- To hear the original sound, select the normal sound track by pressing **AUDIO OUT**.
- To hear the new sound and original sound mixed together, set **HI-FI/NORMAL MIX** to ON.

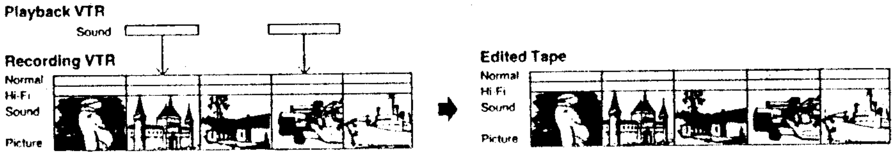
AV Insert Editing

Allows the partial replacement of the picture and both the Hi-Fi and normal sound on a recorded tape.


Playback VTR
Normal
Hi-Fi
Sound
Picture
Recording VTR
Normal
Hi-Fi
Sound
Picture
Edited Tape
Normal
Hi-Fi
Sound
Picture

Audio Dubbing

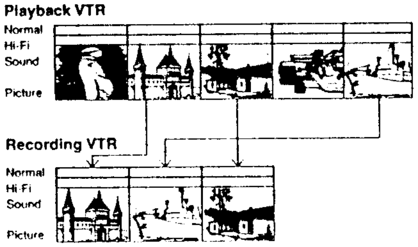
Allows the partial replacement of the normal sound on a recorded tape. Hi-Fi sound is left in its original state.


Playback VTR
Sound
Recording VTR
Normal
Hi-Fi
Sound
Picture
Edited Tape
Normal
Hi-Fi
Sound
Picture

- To hear the new sound, select the normal sound track by pressing **AUDIO OUT**.
- To hear the new sound and original sound mixed together, set **Hi-Fi/NORMAL MIX** to ON.

Assemble Editing

Allows the required scenes (picture and sound) to be picked up from one or more recorded tapes and recorded in any desired order onto another tape.

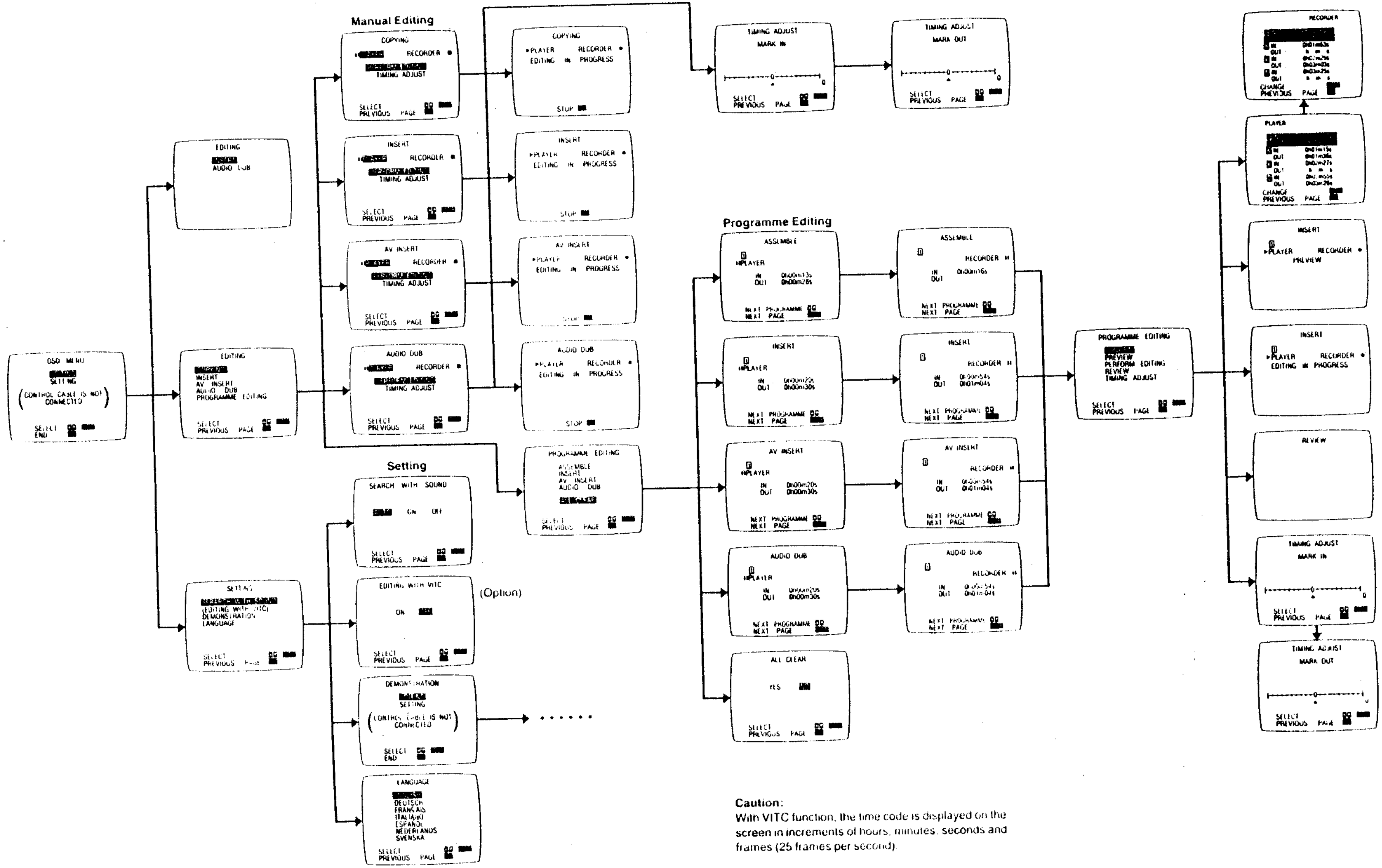

Playback VTR
Normal
Hi-Fi
Sound
Picture
Recording VTR
Normal
Hi-Fi
Sound
Picture

VITC Editing (option)

Upgrading can be done through your dealer or one of our Panasonic Service Centers.
- VITC enables picture-precise editing.
- The VITC can also be read during pause and slow-motion.
- VITC=Vertical Interval Time Code

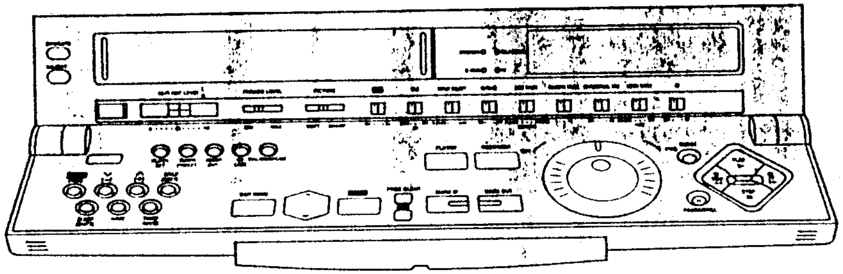
After upgrading, the NV-HS1000 is able to read or write VITC depending on the application.
This time code (VITC) is recorded together with the picture.

Flow Chart for On Screen Displays


Manual Editing
Setting
(Option)
Programme Editing
OSD MENU
SETTING
(CONTROL CABLE IS NOT CONNECTED)
SELECT
END
EDITING
AUDIO DUB
INSERT
AV INSERT
PROGRAMME EDITING
PREVIOUS
PAGE
COPYING
RECORDER
TIMING ADJUST
PLAYER
EDITING IN PROGRESS
STOP
SEARCH WITH SOUND
ON
OFF
EDITING WITH VITC
DEMONSTRATION
LANGUAGE
DEUTSCH
FRANÇAIS
ITALIANO
ESPAÑOL
NEDERLANDS
SVENSKA
ASSEMBLE
ALL CLEAR
YES
IN
OUT
NEXT PROGRAMME
NEXT PAGE
MARK IN
MARK OUT
PREVIEW
PERFORM EDITING
REVIEW
CHANGE
……

Caution:
With VITC function, the time code is displayed on the screen in increments of hours, minutes, seconds and frames (25 frames per second).

Manual Editing



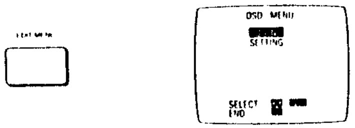
Copying

Preparation

- Make the necessary connections. See page 31.
- Insert a recorded cassette into the playback VTR, and a cassette with an intact erasure prevention tab into the recording VTR.
- Select **PAL/MESECAM** on the recording VTR.
- Confirm that the TV is on.

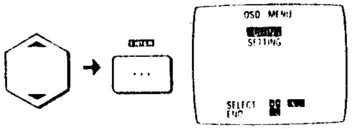
Operations **On Screen Display**

1


OSD MENU
SETTING
SELECT
END

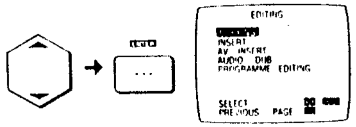
Press **EDIT MENU**.

2


OSD MENU
SETTING
SELECT
END

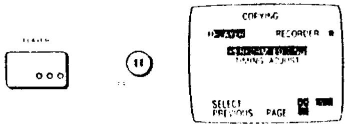
Select **EDITING**.

3


EDITING
INSERT
AV INSERT
AUDIO DUB
PROGRAMME EDITING
SELECT
PREVIOUS PAGE

Select **COPYING**.
- If the playback VTR receives no input signals, the On Screen Display may disappear. In such a case, follow the next step and then the On Screen Display will appear.

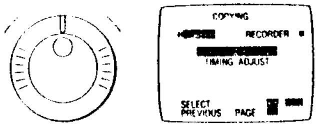
4


COPYING
RECORDER
TIMING ADJUST
SELECT
PREVIOUS PAGE

Press **PLAYER** and **PAUSE/STILL**.
- The picture from the playback VTR appears on the screen.

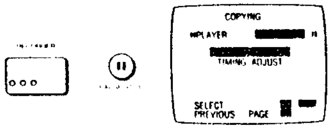
Operations **On Screen Display**

5


COPYING
RECORDER
TIMING ADJUST
SELECT
PREVIOUS PAGE

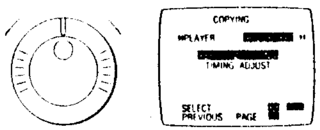
Search for the edit start point on the playback VTR.

6


COPYING
PLAYER
TIMING ADJUST
SELECT
PREVIOUS PAGE

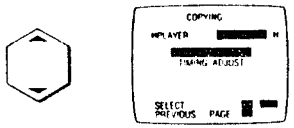
Press **RECORDER** and **PAUSE/STILL**.
- The picture from the recording VTR appears on the screen.
- Steps **6** and **7** need not be performed when a non-recorded cassette is used.

7


COPYING
PLAYER
TIMING ADJUST
SELECT
PREVIOUS PAGE

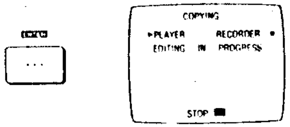
Search for the edit start point on the recording VTR.

8


COPYING
PLAYER
TIMING ADJUST
SELECT
PREVIOUS PAGE

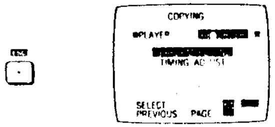
Select **PERFORM EDITING**.

9


COPYING
PLAYER RECORDER
EDITING IN PROGRESS
STOP

Press **ENTER**.
- Editing begins.

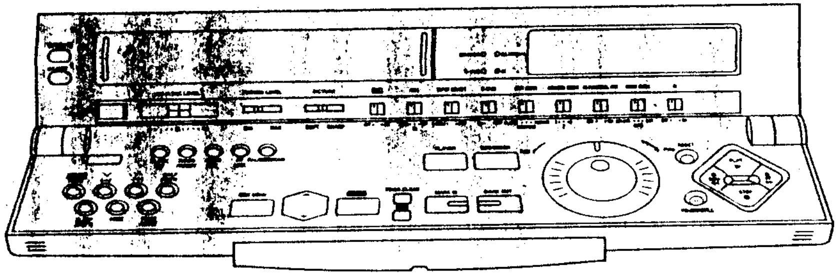
10


COPYING
PLAYER
TIMING ADJUST
SELECT
PREVIOUS PAGE

Press **ESC** to stop editing.

11

Press **EDIT MENU**.
- The On Screen Display disappears.



Insert, AV Insert Editing and Audio Dubbing

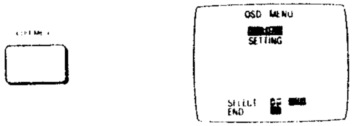
Example: Insert Editing
AV Insert Editing and Audio Dubbing are also performed using the same procedure.

Preparation

- Make the necessary connections. See page 31.
- Insert a recorded cassette into the playback VTR, and a cassette with an intact erasure prevention tab into the recording VTR.
- Select **PAL/MESECAM** on the recording VTR.
- Confirm that the TV is on.

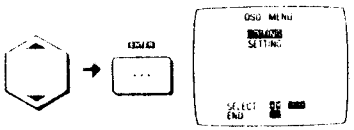
Operations **On Screen Display**

1


OSD MENU
SETTING
SELECT
END

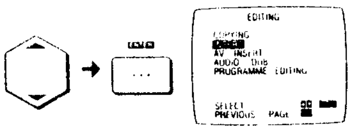
Press **EDIT MENU**.

2


OSD MENU
SETTING
SELECT
END

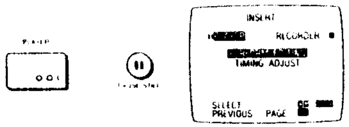
Select **EDITING**.

3


EDITING
COPYING
AV INSERT
AUDIO DUB
PROGRAMME EDITING
SELECT
PREVIOUS PAGE

Select **INSERT**.
- If the playback VTR receives no input signals, the On Screen Display may disappear.
In such a case, follow the next step and then the On Screen Display will appear.

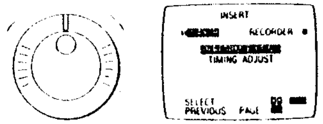
4


INSERT
RECORDER
TIMING ADJUST
SELECT
PREVIOUS PAGE

Press **PLAYER** and **PAUSE/STILL**.
- The picture from the playback VTR appears on the screen.

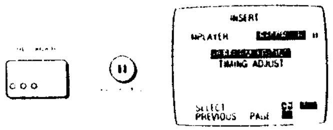
Operations **On Screen Display**

5


INSERT
RECORDER
TIMING ADJUST
SELECT
PREVIOUS PAGE

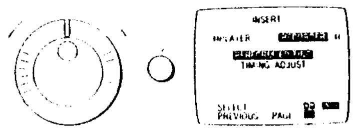
Search for the edit start point on the playback VTR.

6


INSERT
PLAYER
TIMING ADJUST
SELECT
PREVIOUS PAGE

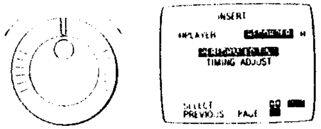
Press **RECORDER** and **PAUSE/STILL**.
- The picture from the recording VTR appears on the screen.

7


INSERT
PLAYER
TIMING ADJUST
SELECT
PREVIOUS PAGE

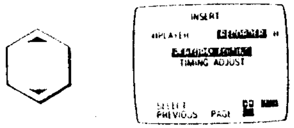
Search for the edit end point on the recording VTR and press **RESET**.

8


INSERT
PLAYER
TIMING ADJUST
SELECT
PREVIOUS PAGE

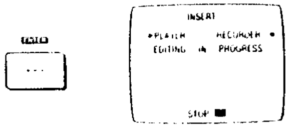
Search for the edit start point on the recording VTR.

9


INSERT
PLAYER
TIMING ADJUST
SELECT
PREVIOUS PAGE

Select **PERFORM EDITING**.

10


INSERT
PLAYER
RECORDER
EDITING IN PROGRESS
STOP

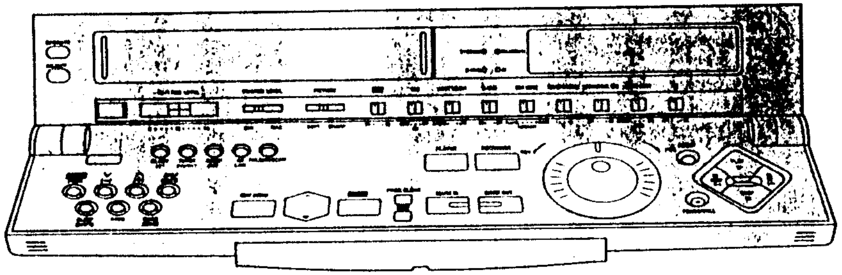
Press **ENTER**.
- Editing begins.
- Editing will finish when the counter reaches 0 00 00.

11

Press **EDIT MENU**.
- The On Screen Display disappears.

Note:
If the VITC function is activated, **RESET** is not operative. In such a case, turn off the VITC function.

Programme Editing



Assemble Editing

By setting the edit start point and end point on the playback VTR, along with the edit start point on the recording VTR, assemble editing of up to 10 scenes can be performed automatically.

Preparation

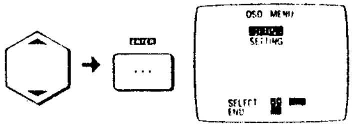
- Make the necessary connections. See page 31.
- Insert a recorded cassette into the playback VTR, and a cassette with an intact erasure prevention tab into the recording VTR.
- Select **PAL/MESECAM** on the recording VTR.
- Confirm that the TV is on.

Operations **On Screen Display**

1

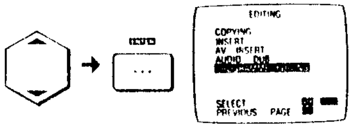
Press **EDIT MENU**.

2


OSD MENU
SETTING
SELECT
END

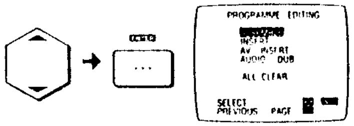
Select **EDITING**.

3


EDITING
COPYING
INSERT
AV INSERT
AUDIO DUB
SELECT
PREVIOUS PAGE

Select **PROGRAMME EDITING**.

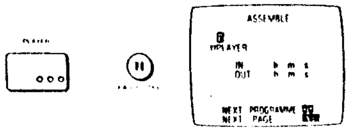
4


PROGRAMME EDITING
INSERT
AV INSERT
AUDIO DUB
ALL CLEAR
SELECT
PREVIOUS PAGE

Select **ASSEMBLE**.

- If the playback VTR receives no input signals, the On Screen Display may disappear.
  In such a case, follow the next step and then the On Screen Display will appear.

5

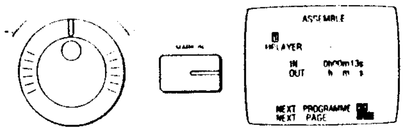

ASSEMBLE
PLAYER
IN h m s
OUT h m s
NEXT PROGRAMME
NEXT PAGE

Press **PLAYER** and **PAUSE/STILL**.

- The picture from the playback VTR appears on the screen.

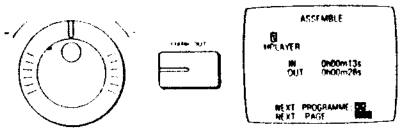
Operations **On Screen Display**

6


ASSEMBLE
PLAYER
IN 0h00m13s
OUT h m s
NEXT PROGRAMME
NEXT PAGE

Search for the edit start point on the playback VTR and press **MARK IN**.

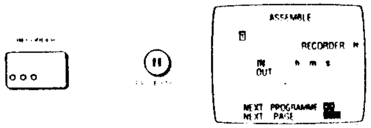
7


ASSEMBLE
PLAYER
IN 0h00m13s
OUT 0h00m28s
NEXT PROGRAMME
NEXT PAGE

Search for the edit end point on the playback VTR and press **MARK OUT**.

- If there is more than one programme, select a programme number using ▼ and ▲, and repeat steps **6** and **7**.

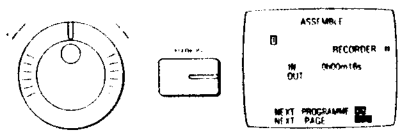
8


ASSEMBLE
RECORDER
IN h m s
OUT
NEXT PROGRAMME
NEXT PAGE

Press **RECORDER** and **PAUSE/STILL**.

- The picture from the recording VTR appears on the screen.

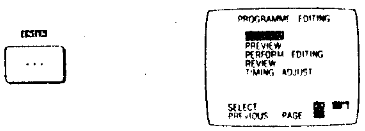
9


ASSEMBLE
RECORDER
IN 0h00m16s
OUT
NEXT PROGRAMME
NEXT PAGE

Search for the edit start point on the recording VTR and press **MARK IN**.

- Step **9** need not be performed when a non-recorded cassette is used.

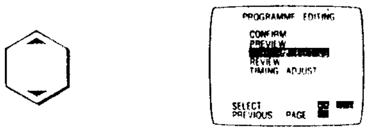
10


PROGRAMME EDITING
PREVIEW
PERFORM EDITING
REVIEW
TIMING ADJUST
SELECT
PREVIOUS PAGE

Press **ENTER**.

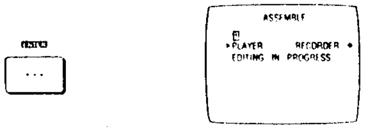
- The edit start point and the edit end point are memorized.

11


PROGRAMME EDITING
CONFIRM
PREVIEW
REVIEW
TIMING ADJUST
SELECT
PREVIOUS PAGE

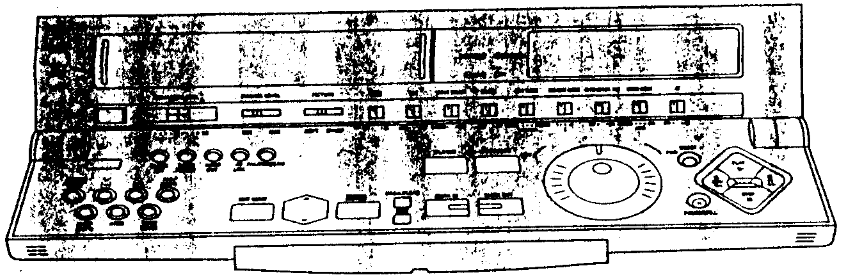
Select **PERFORM EDITING**.

12


ASSEMBLE
PLAYER
RECORDER
EDITING IN PROGRESS

Press **ENTER**.

- Editing begins.
- After editing of all programmes is completed, the both VTRs stop in still playback mode.



Insert, AV Insert Editing and Audio Dubbing

There are 2 types of programme.
To insert only a particular portion:
Set the edit start point and end point on the playback VTR, and the edit start point on the recording VTR.
To insert within fixed limits:
Set the edit start point on the playback VTR, and the edit start and end point on the recording VTR.

- If four points are set, insertion will end when the first end point is reached

Example: Insert Editing
AV Insert Editing and Audio Dubbing are also performed using the same procedure.

Preparation

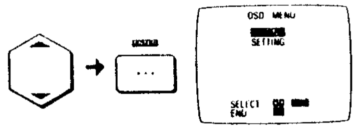
- Make the necessary connections. See page 31.
- Insert a recorded cassette into the playback VTR, and a cassette with an intact erasure prevention tab into the recording VTR.
- Select **PAL/MESECAM** on the recording VTR.
- Confirm that the TV is on.

Operations **On Screen Display**

1

Press **EDIT MENU**.

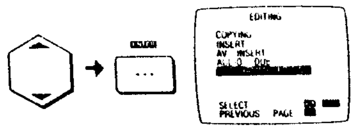
2



OSD MENU
SETTING
SELECT
END

Select **EDITING**.

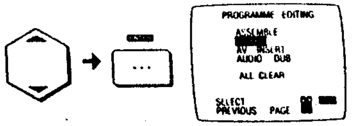
3



EDITING
COPYING
INSERT
AV INSERT
AUDIO DUB
SELECT
PREVIOUS PAGE

Select **PROGRAMME EDITING**.

4



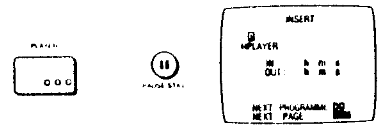
PROGRAMME EDITING
ASSEMBLE
AV INSERT
AUDIO DUB
ALL CLEAR
SELECT
PREVIOUS PAGE

Select **INSERT**.

- If the playback VTR receives no input signals, the On Screen Display may disappear.
In such a case, follow the next step and then the On Screen Display will appear.

Operations **On Screen Display**

5

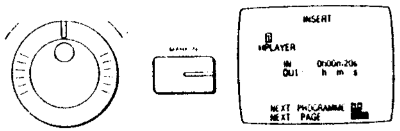


INSERT
PLAYER
IN h m s
OUT h m s
NEXT PROGRAMME
NEXT PAGE

Press **PLAYER** and **PAUSE/STILL**.

- The picture from the playback VTR appears on the screen.

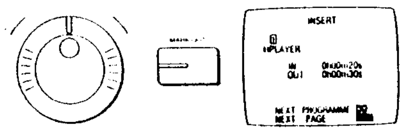
6



INSERT
PLAYER
IN 0h00m20s
OUT h m s
NEXT PROGRAMME
NEXT PAGE

Search for the edit start point on the playback VTR and press **MARK IN**.

7

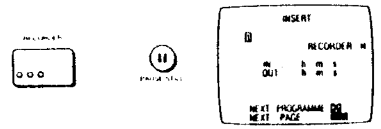


INSERT
PLAYER
IN 0h00m20s
OUT 0h00m30s
NEXT PROGRAMME
NEXT PAGE

Search for the edit end point on the playback VTR and press **MARK OUT**.

- This step is not necessary if the end point on the recording VTR has been set.

8

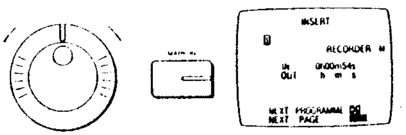


INSERT
RECORDER
IN h m s
OUT h m s
NEXT PROGRAMME
NEXT PAGE

Press **RECORDER** and **PAUSE/STILL**.

- The picture from the recording VTR appears on the screen.

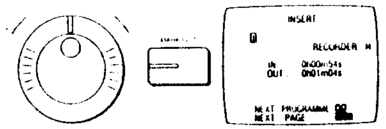
9



INSERT
RECORDER
IN 0h00m54s
OUT h m s
NEXT PROGRAMME
NEXT PAGE

Search for the edit start point on the recording VTR and press **MARK IN**.

10

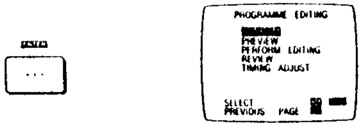


INSERT
RECORDER
IN 0h00m54s
OUT 0h01m04s
NEXT PROGRAMME
NEXT PAGE

Search for the edit end point on the recording VTR and press **MARK OUT**.

- This step is not necessary if the end point on the playback VTR has been set.
- If there is more than one programme, select a programme number using ▼ and ▲, and repeat steps **5** to **10**.

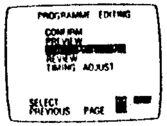
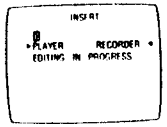
11



PROGRAMME EDITING
PREVIEW
PERFORM EDITING
REVIEW
TIMING ADJUST
SELECT
PREVIOUS PAGE

Press **ENTER**.

- The edit start point and the edit end point are memorized

Operations	On Screen Display	
12	 PROGRAMME EDITING CONFIRM PREVIEW REVIEW TIMING ADJUST SELECT PREVIOUS PAGE	Select **PERFORM EDITING**. • If a programme is not correct, it will appear on the screen. Set the edit start and end points correctly. • To see a preview before performing editing, select **PREVIEW**. See page 46.
13	 INSERT PLAYER RECORDER EDITING IN PROGRESS	Press **ENTER**. • Editing begins. • After editing of all programmes is completed, the both VTRs stop in still playback mode.

Notes for Programme Editing:

- For the edit start point, use a location which is at least 10 seconds from the beginning of the tape. Otherwise, the programme will not be executed.
- Programme editing can be suspended in mid-execution by pressing **ESC**. As a result, however, the picture immediately after suspending may disappear.
- Programmes are stored even after editing is completed. Unless they are cancelled, programmes are stored even after the power has been turned off.
- Programme editing can not be performed with a movie camera that has a 4-digit counter. The following movie cameras will not work in the programme editing mode with this VTR.

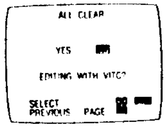
VHS full movies:	NV-M10E, NV-M25E, NV-M40E, NV-MS4E
VHS-C movies:	NV-MS90E

(As of April 1994)

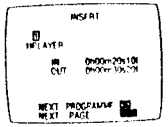
When the VITC function is on:

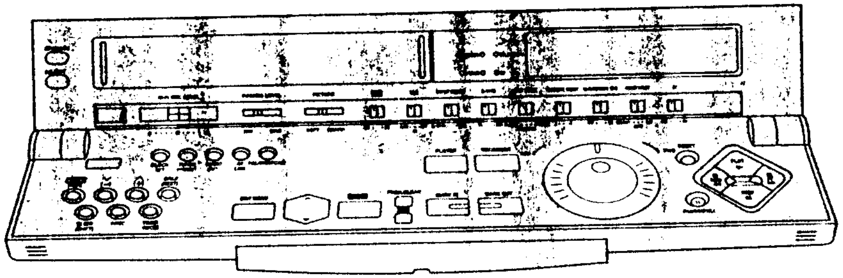
- If the programme on the normal counter has been stored, the On Screen Display shown below may appear after step 3.

If editing is to be performed using the VITC function, select YES to cancel all the editing programmes. (When the VITC function is off, the On Screen Display shown below will appear if the programme with the time code has been stored.)


ALL CLEAR
YES
EDITING WITH VITC?
SELECT
PREVIOUS PAGE

- When **MARK IN** or **MARK OUT** is pressed, the time code is displayed on the screen in increments of hours, minutes, seconds and frames (25 frames per second).

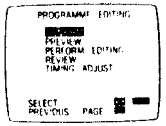

INSERT
PLAYER
IN 0h00m20s10f
OUT
NEXT PROGRAMME
NEXT PAGE



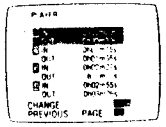
Other Editing Functions

To confirm and Change Editing Programmes

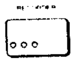
1 Select **CONFIRM** after setting the edit start and end points.

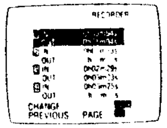

PROGRAMME EDITING
PREVIEW
PERFORM EDITING
REVIEW
TIMING ADJUST
SELECT
PREVIOUS PAGE

2 Press **ENTER**.
- The programme list for the playback VTR is displayed.

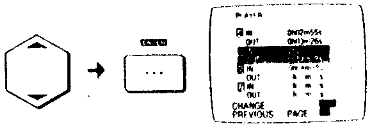

PLAYER
IN
OUT
CHANGE
PREVIOUS PAGE

3 Press **RECORDER** to confirm the programmes on the recording VTR.
- Press **PLAYER** to return to the programme list on the playback VTR.

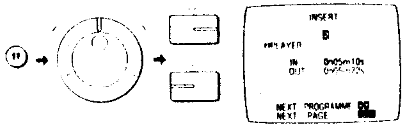



RECORDER
IN
OUT
CHANGE
PREVIOUS PAGE

4 Select the programme to be changed.


PLAYER
IN 0h02m55s
OUT 0h03m26s
IN
OUT
CHANGE
PREVIOUS PAGE

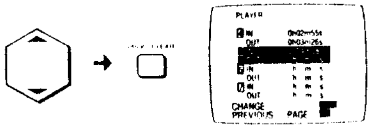
5 Search for the start or end point to be changed and press **MARK IN** or **MARK OUT**.

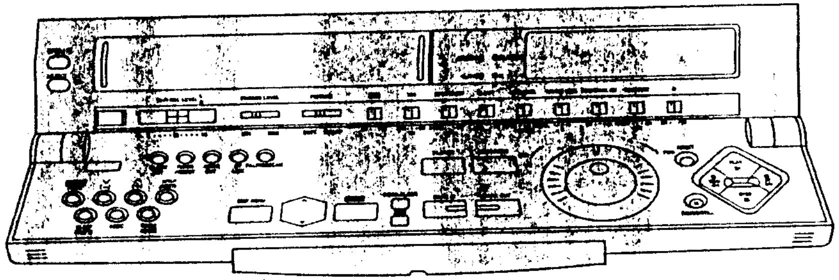

INSERT
PLAYER
IN 0h05m10s
OUT
NEXT PROGRAMME
NEXT PAGE

6 Press **ENTER**.

To cancel an Editing Programme

In step **4** above, select the programme to be canceled and press **PROG. CLEAR**.

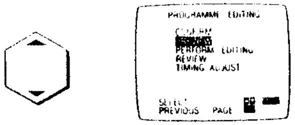

PLAYER
IN 0h02m55s
OUT 0h03m26s
IN
OUT
IN
OUT
CHANGE
PREVIOUS PAGE



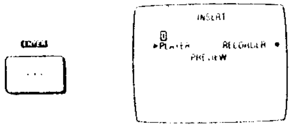
Preview Function

Before performing actual editing, this function allows confirmation of editing operations without recording.

1 Select **PREVIEW** after setting the edit start and end points


PROGRAMME EDITING
CONFIRM
PREVIEW
PERFORM EDITING
REVIEW
TIMING ADJUST
SELECT
PREVIOUS PAGE

2 Press **ENTER**
- Preview begins.

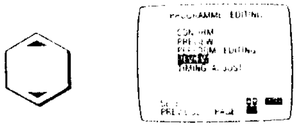

INSERT
PLAYER
RECORDER
PREVIEW

Notes:
- Preview function works only when this VTR is used as the recording VTR
- Preview function does not work during assemble editing.

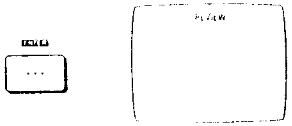
Review Function

After editing has been completed, this function plays back from the edit start point to the edit end point on the recording VTR.

1 Select **REVIEW** after performing editing


PROGRAMME EDITING
CONFIRM
PREVIEW
PERFORM EDITING
REVIEW
TIMING ADJUST

2 Press **ENTER**
- Review begins.



Edit Timing Adjustment

When performing editing in conjunction with a unit which has a different mechanism, there may be a lag in the edit start point due to a deviation between the time a pause cancellation signal is received by the recording unit and the time recording actually begins.
Edit Timing Adjustment is used to compensate the edit start and end time in light of this start-up time deviation.

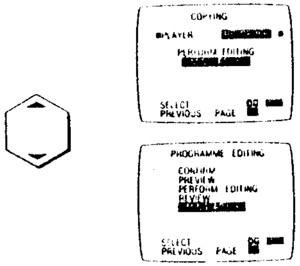
1 Record the second hand on a stopwatch with a movie camera.

2 Insert this recorded cassette into the playback unit, and a cassette with an intact erasure prevention tab into the recording VTR.

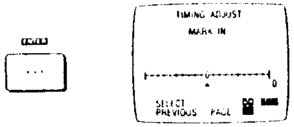
3 Using the point where the second hand reaches zero as the edit start point, perform copying.

4 Play back the copied tape, and check how many seconds had elapsed at the recording start point.
- If timing is correct, recording should begin at exactly zero seconds.

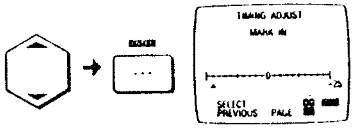
5 Select **TIMING ADJUST** from the screen below.


COPYING
PLAYER
PERFORM EDITING
SELECT
PREVIOUS PAGE
PROGRAMME EDITING
CONFIRM
PREVIEW
PERFORM EDITING
REVIEW
TIMING ADJUST

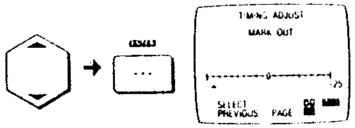
6 Press **ENTER**


TIMING ADJUST
MARK IN
0
SELECT
PREVIOUS PAGE

7 Adjust the timing for the start point by setting the amount of the discrepancy of the second hand.
- The setting is displayed in frame (1/25 of a second) units. Thus if, for example, one second had elapsed, set to −25.


TIMING ADJUST
MARK IN
0
-25
SELECT
PREVIOUS PAGE

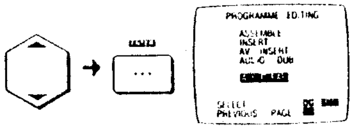
8 Adjust the timing for the end point in the same manner.


TIMING ADJUST
MARK OUT
0
-25
SELECT
PREVIOUS PAGE

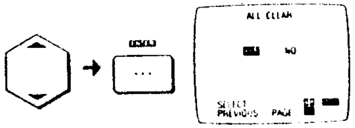
Note:
Edit timing adjustment function only works during programme editing.

To cancel All Editing Programmes

1 Select **ALL CLEAR** from the screen below.


PROGRAMME EDITING
ASSEMBLE
INSERT
AV INSERT
AUDIO DUB
ALL CLEAR
SELECT
PREVIOUS PAGE

2 Select **YES**.
- All programmes will be canceled.


ALL CLEAR
YES
NO
SELECT
PREVIOUS PAGE

Editing when not Using an Edit Cable

To connect a VTR or Movie Camera without an Edit Socket and use This VTR as the Recording VTR

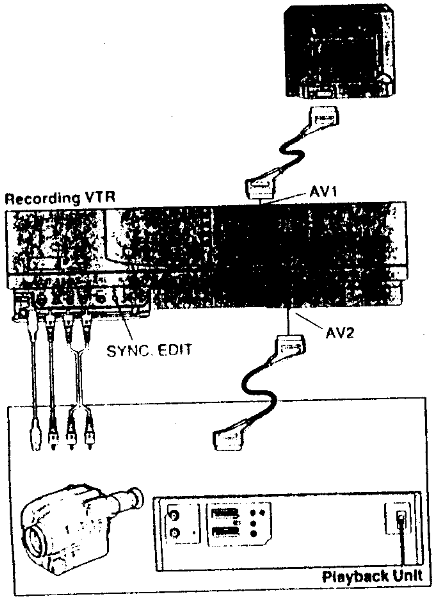
- Connect the AV1 socket on this VTR to the TV.
- Connect the AV2 socket or the AUDIO/VIDEO/S-VIDEO IN (AV3) sockets on this VTR to the playback unit.
- Select A2 or A3 by pressing ∧ ∨ on this VTR.

A2: Through the AV2 socket
A3: Through the AV3 sockets on front panel
Set **INPUT SELECT** on this VTR.
S-VIDEO: Through the S-VIDEO IN and AUDIO IN sockets
LINE: Through the VIDEO IN and AUDIO IN sockets

- Set **EDIT MODE** on this VTR to RECORDER.
- Control is performed by the respective units.

Preparation

- Make the necessary connections.
- Insert a recorded cassette into the playback unit, and a cassette with an intact erasure prevention tab into the recording VTR.
- Select **PAL/MESECAM** on the recording VTR.
- Confirm that the TV is on.

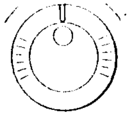


Assembly Editing

Operations

1 Press **PAUSE/STILL** on the recording VTR.

2 Search for the end of the previous recording.



3 Press **REC** to set for the new recording.

4 Start playback on the playback unit.

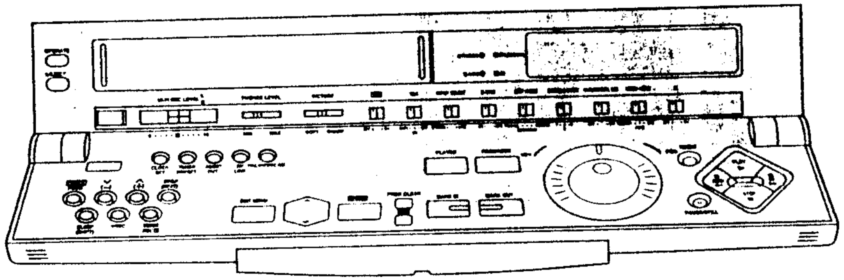
5 Press **PAUSE/STILL** again to start the new recording.

6 Press **STOP** to stop recording.

Synchronized Editing

By connecting a VTR or movie camera with synchronized editing capability to this VTR using a synchro connection cord (optional), it is possible to synchronize the playback start and stop of the playback unit with the recording start and stop of this VTR.

1. Put the recording VTR into the recording pause mode by pressing **REC** and **PAUSE/STILL**.
2. Put the playback unit into the still playback mode at the point where editing is to begin.
3. Press **PAUSE/STILL** on the recording VTR.
   - The playback unit switches over to the playback mode, and copying begins automatically.



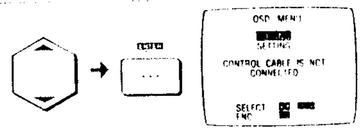
Insert Editing, AV Insert Editing and Audio Dubbing

Operations **On Screen Display**

1

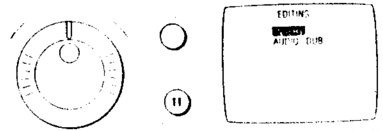
Press **EDIT MENU**.

2



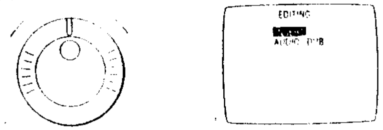
Select **EDITING**.

3



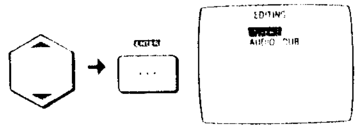
Press **PAUSE/STILL** and search for the edit end point, and press **RESET**.
- It is not required for audio dubbing to search for the edit end point and reset.

4



Search for the edit start point.

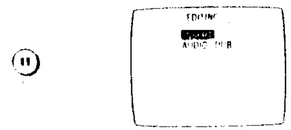
5



Select **INSERT** or **AUDIO DUB**.
- AV insert editing is selected if both **AUDIO DUB** and **INSERT** are selected.
- If once selected, Insert or Audio Dubbing mode is still active even if the On Screen Display disappears by pressing **EDIT MENU**.

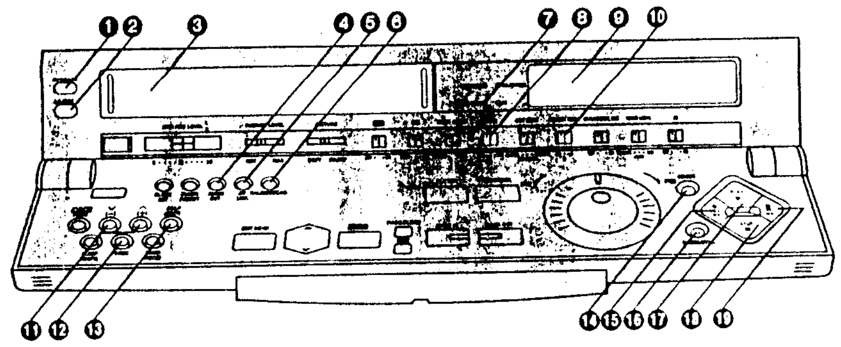
6 Start playback on the playback unit.

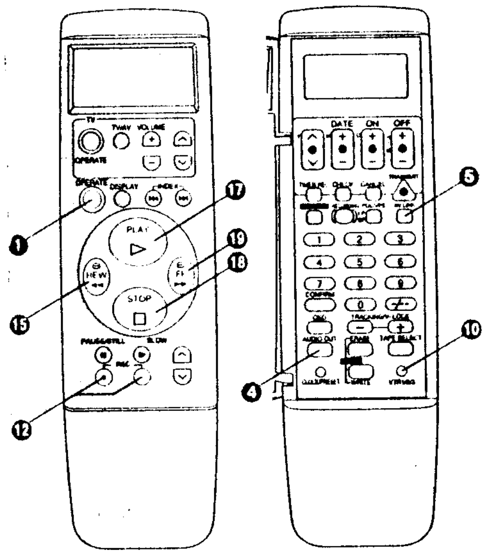
7



Press **PAUSE/STILL**.
- Editing begins.
- Insert and AV insert editing will finish when the counter reaches 0:00 00.
- Press **STOP** to stop audio dubbing.

Controls and Connection Sockets





Basic Controls

❶ OPERATE
To turn the VTR on and off.

❷ EJECT
To eject a video cassette.

❸ Cassette Compartment
Insert a video cassette here.

❹ AUDIO OUT
To select the desired sound mode.
At the every push of this button, the audio output mode changes as follows.

[→Stereo→Left→Right→Normal audio track→]

The Left and Right Indicators show which sound mode is selected in the following way.

Stereo: Both the Left and Right Indicators are lit
Left: The Left Indicator is lit
Right: The Right Indicator is lit
Normal: Both the Left and Right Indicators are not lit

❺ AV LINK
To select the VTR mode or TV mode for AV LINK.

❻ PAL/MESECAM
Set according to the colour TV system used during recording and playback.
When the MESECAM Indicator is lit, the MESECAM system is selected.

❼ S-VHS Indicator
Lights up when the S-VHS switch is set to ON.

❽ S-VHS
When recording on an S-VHS cassette tape, select the desired recording format with this switch.
ON: The recording will be made in the S-VHS format.
- The S-VHS indicator lights up.

OFF: The recording will be made in the VHS format.
- The S-VHS indicator does not light up.
(It is possible to make a recording on an S-VHS cassette tape in the VHS format, for example, in order to play back the tape on another VHS VTR.)

- When using VHS cassettes, the recording is made in the VHS format irrespective of the position to which this switch is set.
- For playback, it is not necessary to operate this switch.
- When a tape which was recorded in the S-VHS format is played back on a conventional VHS VTR, it is not possible to obtain playback picture.

❾ Display

❿ REMOTE MODE (VTR1/2/3)
VTR1: Set to this position on both the VTR and remote controller for normal use with one VTR.
VTR2: Set to this position when using two Panasonic VTRs.
VTR3: Set to this position when using three Panasonic VTRs.
This allows the remote controller to be set for operating VTR1, VTR2 or VTR3.

⓫ ∨(−) ∧(+)
To select the required programme position (TV station).
To set the clock and timer recording.

⓬ REC
To start a recording.

⓭ SP/LP (NEXT)
To select the tape speed required for recording.
SP gives the best picture quality.
LP gives the longest recording time.
To proceed to the next item during setting procedure.

⓮ RESET
To reset the tape counter (elapsed time) to "0 00.00".
- The tape counter is automatically reset to "0 00 00" when a video cassette is inserted.

⓯ REW (REWIND)

In the stop mode:	To rewind the tape.
In the playback mode:	To search backward.
In the rewind mode:	To obtain high speed picture.

"◁◁" is lit.

⓰ PAUSE/STILL

In the stop mode:	Still picture (Jog/Shuttle mode)
During playback:	Still picture (Jog/Shuttle mode)
During recording:	To interrupt recording

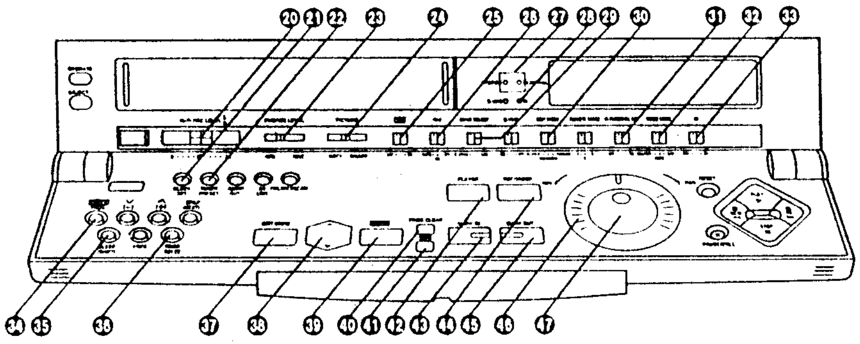
⓱ PLAY
To start playback. "▷" is lit.

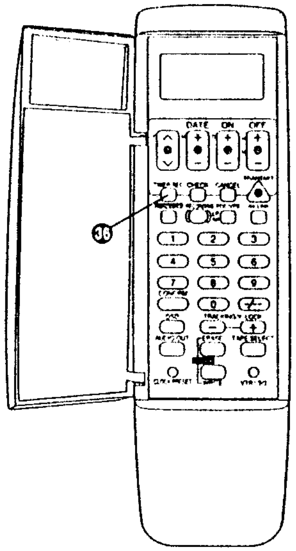
⓲ STOP
To stop any playback or recording.

⓳ FF (FAST FORWARD)

In the stop mode:	To fast forward the tape.
In the playback mode:	To search forward.
In the fast forward mode:	To obtain high speed picture.

"▷▷" is lit.





Advanced Controls

⑳ **Hi-Fi REC LEVEL**
To adjust the recording level to peak at +4 dB on the recording level indicator.

㉑ **CLOCK SET**
To set the time.

㉒ **TUNER PRESET**
To initiate TV station settings for the tuner.

㉓ **PHONES LEVEL**
For adjusting the volume level of connected stereo headphones.

㉔ **PICTURE**
To make picture sharper (SHARP) or softer (SOFT).

㉕ **TBC**
When the tape in the cassette is loose or damaged, or when the tape movement is unstable during recording or playback, the playback picture may shake from side to side and the picture may become distorted. In this case, activate the Time Base Corrector by setting the TBC Switch to ON, and the picture will become stable and the shaking will be minimized.

- For normal use, set the TBC Switch to OFF.
- During playback of some pre-recorded tapes, the tape may shake vertically. In such a case, set the TBC Switch to OFF.
- This function only works during normal playback in the PAL system.

㉖ **16:9**

AUTO: For automatically identifying the pictures as 16:9 pictures or 4:3 pictures during recording and playback and showing them on the wide TV screen.
- Normally set at this position.

ON: For recording and playback in such a way that the pictures expanded to 16:9 are shown on the wide TV screen at all time.

OFF: For recording and playback in such a way that 4:3 pictures are shown on the wide or 4:3 TV screen at all times.

㉗ **STEREO and BILINGUAL Indicators**
When receiving a TV programme, the type of sound system in which it is broadcast is automatically indicated.

㉘ **AI Indicator**
Lights up when the AI function is on.

㉙ **INPUT SELECT**
When Recording via the AV3 sockets on the front panel, select A3 by pressing ∧ ∨ and set this switch to S-VIDEO or LINE.

S-VIDEO: Through the S-VIDEO IN and AUDIO IN sockets

LINE: Through the VIDEO IN and AUDIO IN sockets

㉚ **EDIT MODE**

PLAYER: When this VTR is used as the playback VTR during editing operations.

RECORDER: When this VTR is used as the recording VTR during editing operations.
- Normally set at this position.

PASSIVE: When operating this VTR using another VTR or an editing controller.
- The picture quality best suited for editing is selected.
- When setting at this position, operation will not be possible and the On Screen Display will not appear.

㉛ **HI-FI/NORMAL MIX**

OFF: Normally set at this position to reproduce the better sound available from the Hi-Fi track.

ON: Both sound tracks (the Hi-Fi sound track and the normal sound track) are played back mixed together. Use this setting when playing back a cassette tape which has been insert edited or audio dubbed.

㉜ **VIDEO MODE**

COLOUR: When performing recording and playback in colour.

AUTO: The VTR automatically distinguishes between colour and black-and-white during recording and playback.

B/W: When performing recording and playback in black and white.

㉝ **AI**

ON: Using the AI function, recording and playback are performed in the state which achieves optimum picture quality in light of characteristics of a tape.
- The picture sharpness cannot be adjusted in this setting.

OFF: Turns off the AI function.

㉞ **CHECK/PROG**
To select a timer programme number.
"1, 2, 3... or 8" is lit.
To display details of preset timer recording

㉟ **SLEEP (SHIFT)**
To set the time to turn off the VTR automatically.
To blank unoccupied programme position.

㊱ **TIMER REC**
To turn the timer recording function on and off.
⊡ is lit or not lit.
Once Operating timer recording function, the normal VTR operation is not possible unless this button is set to off.

㊲ **EDIT MENU**
To perform editing operations.

㊳ **▲ ▼**
To make selections from On Screen Display.

㊴ **ENTER**
To make selections from On Screen Display

㊵ **PROG. CLEAR**
To cancel an editing programme.

㊶ **ESC**
To return to the previous page on the screen.
To stop editing.

㊷ **PLAYER**
To operate the playback VTR.

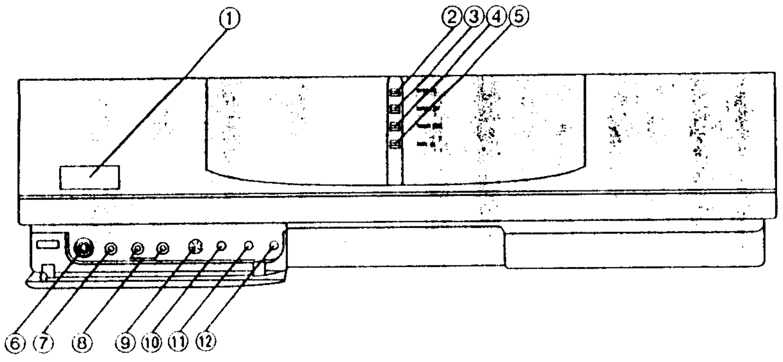
㊸ **MARK IN**
To set the edit start point.

㊹ **RECORDER**
To operate the recording VTR.

㊺ **MARK OUT**
To set the edit end point.

㊻ **Shuttle Ring**
To adjust playback speed backward or forward.

㊼ **Jog Dial**
To locate any desired frame with utmost precision.



① **Infrared Remote Control Receiver Window**

② **OPERATE Indicator**
Lights up when the VTR is turned on.

③ **STAND BY Indicator**
Lights up when the AC mains lead is connected and the VTR is turned off.

④ **TIMER REC Indicator**
Lights up when the timer recording function is on.

⑤ **TAPE IN Indicator**
Lights up when a cassette is inserted.

⑥ **S-VIDEO IN (AV3)**
To connect the S-Video cable to a movie camera or to another VTR that has a S-Video output socket.

⑦ **VIDEO IN (AV3)**
To connect the video cable to a movie camera or to another VTR.

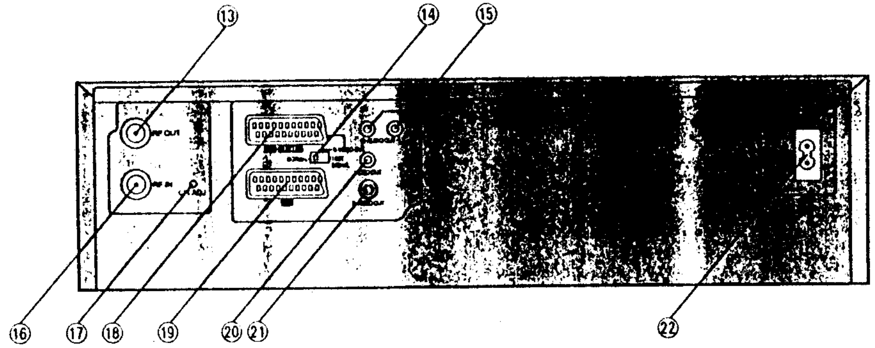
⑧ **AUDIO IN (AV3)**
To connect the audio cable to a movie camera or to another VTR.

⑨ **EDIT**
To connect a movie camera or another VTR equipped with an edit socket or an editing controller.

⑩ **SYNC. EDIT**
To connect a movie camera or another VTR equipped with synchronized editing capability.

⑪ **MIC**
To connect a microphone for recording. Once connected, this socket has priority.

⑫ **PHONES**
To connect stereo headphones.



⑬ **RF OUT**
To connect to the aerial terminal on a TV set.

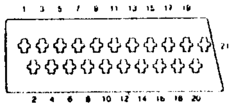
⑭ **NORMAL/S-VIDEO OUT/TEST SIGNAL**
NORMAL: Normally set to this position.
S-VIDEO OUT (AV1):
Set to this position when connecting the VTR to a TV set equipped with 21-pin Euro-AV Connector with pins for separate Y/C signal input.
TEST SIGNAL:
Set to this position when tuning the TV into the VTR.
The test signal is transmitted on channel 36 and AV1.

⑮ **AUDIO OUT**
To connect the sound to a stereo audio system.

⑯ **RF IN**
To connect to the external aerial.

⑰ **CH ADJ.**
To adjust the RF transmitting channel 32～40.

⑱ **AV1**
This 21-pin scart terminal carries input and output signals for both picture and sound. TV sets equipped with a similar socket can be connected here.
This is also called Scart
Peritel
Euro Connector
Euro AV



	NORMAL (AV1/AV2)	S-VIDEO (AV1)
1	AUDIO OUTPUT CH2 (R)	AUDIO OUTPUT CH2 (R)
2	AUDIO INPUT CH2 (R)	AUDIO INPUT CH2 (R)
3	AUDIO OUTPUT CH1 (L)	AUDIO OUTPUT CH1 (L)
4	AUDIO GND	AUDIO GND
5	BLUE GND	No connection
6	AUDIO INPUT CH1 (L)	AUDIO INPUT CH1 (L)
7	BLUE	No connection
8	SWITCHING VOLTAGE	SWITCHING VOLTAGE
9	GREEN GND	No connection
10	No connection	No connection
11	GREEN	No connection
12	No connection	No connection
13	RED GND	No connection
14	BLANKING GND	No connection
15	RED	C OUT
16	BLANKING	No connection
17	VIDEO OUTPUT GND	VIDEO OUTPUT GND
18	VIDEO INPUT GND	No connection
19	VIDEO OUTPUT	Y OUT
20	VIDEO INPUT	VIDEO INPUT
21	GND	GND

Caution: RGB reservation for only E/E operation when connecting the Pay TV decoder

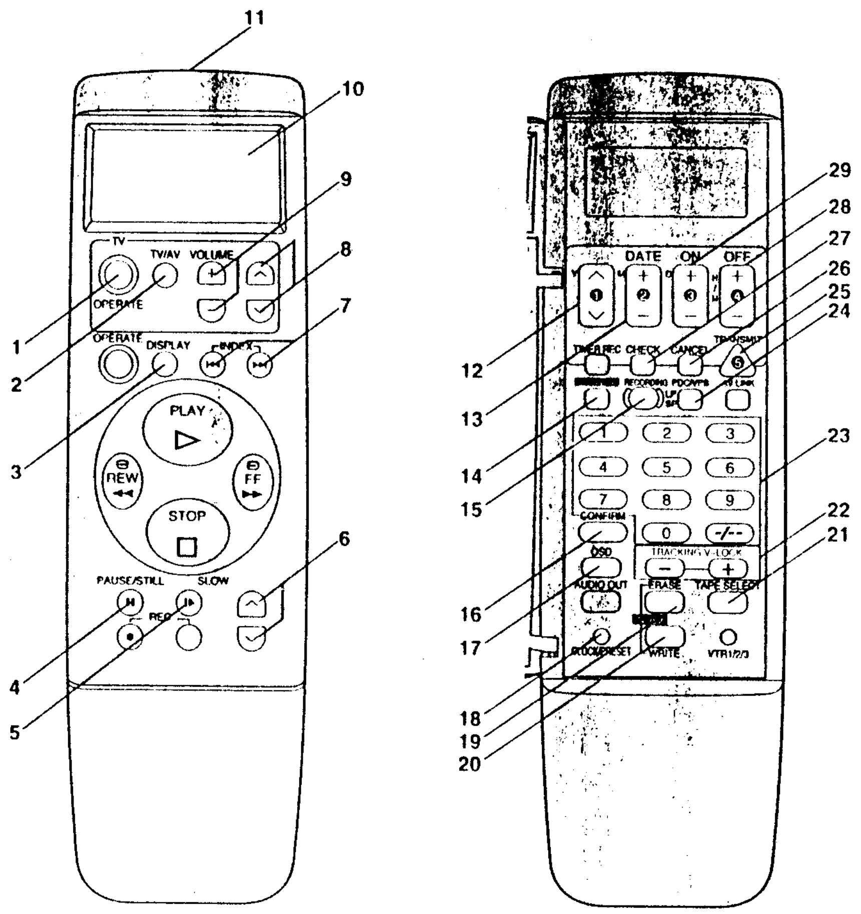
⑲ **AV2**
To connect to a decoder or another VTR.
•Only used as the input socket.

⑳ **VIDEO OUT**
To connect the video cable to a TV or another VTR.

㉑ **S-VIDEO OUT**
To connect the S-Video cable to a TV or another VTR that has a S-Video input socket.

㉒ **AC IN~**
To connect to the main power supply.

Infra-red Remote Controller


1
2
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11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
TV
TV/AV
VOLUME
OPERATE
DISPLAY
INDEX
PLAY
REW
FF
STOP
PAUSE/STILL
SLOW
REC
DATE
ON
OFF
TIMER REC
CHECK
CANCEL
TRANSMIT
RECORDING
PDC/VPS
SP/LP
V-LINK
CONFIRM
OSD
AUDIO OUT
TRACKING V-LOCK
ERASE
TAPE SELECT
CLOCK/PRESET
WRITE
VTR1/2/3

1 OPERATE (TV)
To turn the TV on and off.
- With some TV models, it may only be possible to turn the TV off using this button.

2 TV/AV
To select the TV input.

3 DISPLAY
To change the indication on the VTR Display.

→Clock→Counter→Remaining Tape Time→

4 PAUSE/STILL
During playback: Still picture
During recording: To interrupt recording

5 SLOW
To activate slow playback.

6 ∨∧ (VTR)
To select the required programme position (TV station) of the VTR.

7 INDEX
For the index search function.

8 ∨∧ (TV)
To select the required programme position (TV station) of the TV.

9 VOLUME
To adjust the volume of the TV.

10 Display

11 Infra-red Transmitter
The programming data are transmitted from here to the VTR.

12 ∧∨ (Y)
- To programme a timer recording.
- To set the clock.
- To preset the TV stations.

13 DATE (M)
- To programme a timer recording.
- To set the clock.

14 SHOWVIEW
For the ShowView programming.

15 RECORDING SP/LP
To select the tape speed desired for recording.

16 CONFIRM
To convert the data of a ShowView number.

17 OSD
For the On Screen Display Function.

18 CLOCK/PRESET
- To set the clock.
- To preset the TV stations.
- To set the manufacturer number of the TV.

19 ERASE
To erase Index Signals.

20 WRITE
To write Index Signals.

21 TAPE SELECT
To set the cassette tape length in order to obtain correct indication of the remaining tape time.
E195: For E30, -60, -80, -120, -180 and -195 tapes
E240: For E240 tape
E260: For E260 and -300 tapes

22 TRACKING/V-LOCK
For manual tracking adjustment
The + and – buttons are used to adjust the tracking when, for example, noise bars on the picture are better removed manually than by the automatic digital tracking control. After making a manual adjustment, press both buttons together to return to automatic digital tracking control.

For slow tracking adjustment
When noise bars appear during Still, Still Advance or Slow playback, switch over to slow playback and adjust with the + or – Button to reduce the noise bars.

For vertical locking adjustment
Use the + and – buttons to minimize any vertical jitter during still-picture playback.

23 Number Buttons
- To select the programme positions.

9: (9)

19: (-/--)→(1)→(9)

- To enter a ShowView number.

24 PDC/VPS
To turn the PDC/VPS function on and off.

25 TRANSMIT
To transmit the data that has been set on the remote controller to the VTR.

26 CANCEL
To cancel timer programmes.

27 CHECK
To check timer programmes.

28 OFF (H/M)
- To programme a timer recording.
- To set the clock.
- To preset the TV stations.
- To set the manufacturer number of the TV.

29 ON (D)
- To programme a timer recording.
- To set the clock.

SECTION 2
ADJUSTMENT PROCEDURES

2-1. DISASSEMBLY METHOD

2-1-1. DISASSEMBLY FLOW CHART

This flow chart indicates disassembly steps of the cabinet parts and the circuit boards in order to find the necessary items for servicing.
When reassembling, perform the steps in the reverse order.

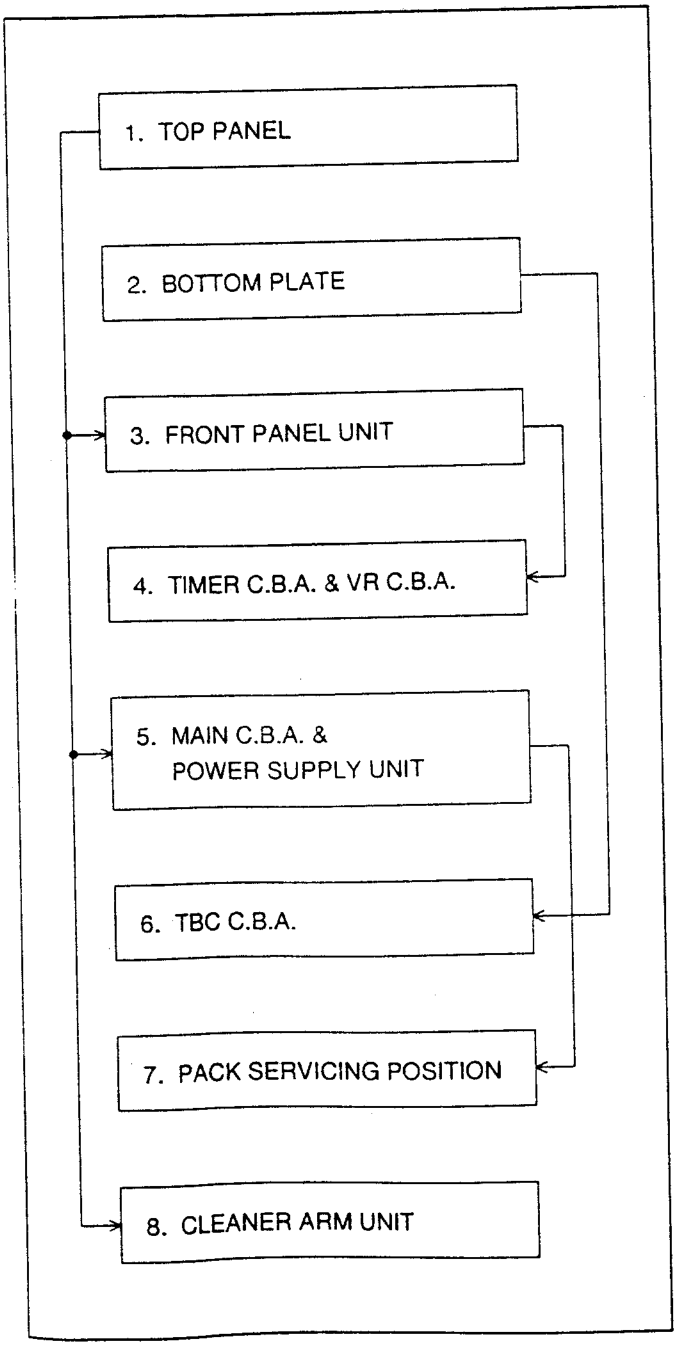

1. TOP PANEL
2. BOTTOM PLATE
3. FRONT PANEL UNIT
4. TIMER C.B.A. & VR C.B.A.
5. MAIN C.B.A. & POWER SUPPLY UNIT
6. TBC C.B.A.
7. PACK SERVICING POSITION
8. CLEANER ARM UNIT

Fig. D1

2-1-2. DETAIL OF DISASSEMBLY METHOD

1. REMOVAL OF THE TOP PANEL

Remove...... 4 Screws (A)

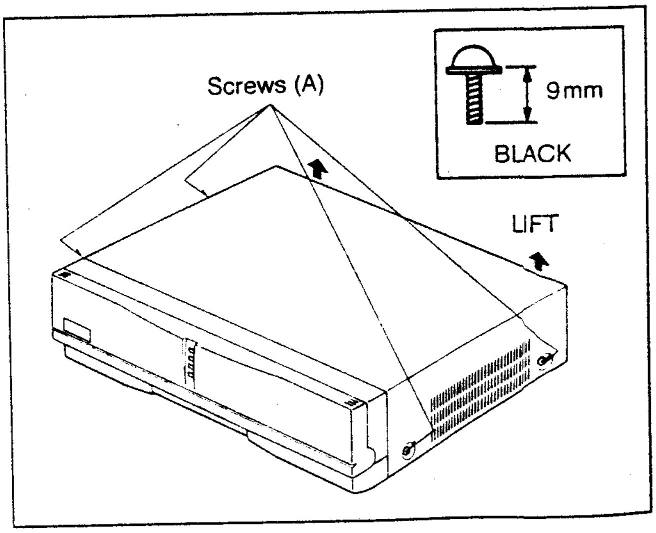

Screws (A)
9mm
BLACK
LIFT

Fig. D2

2. REMOVAL OF THE BOTTOM PLATE

Remove...... 8 Screws (B)

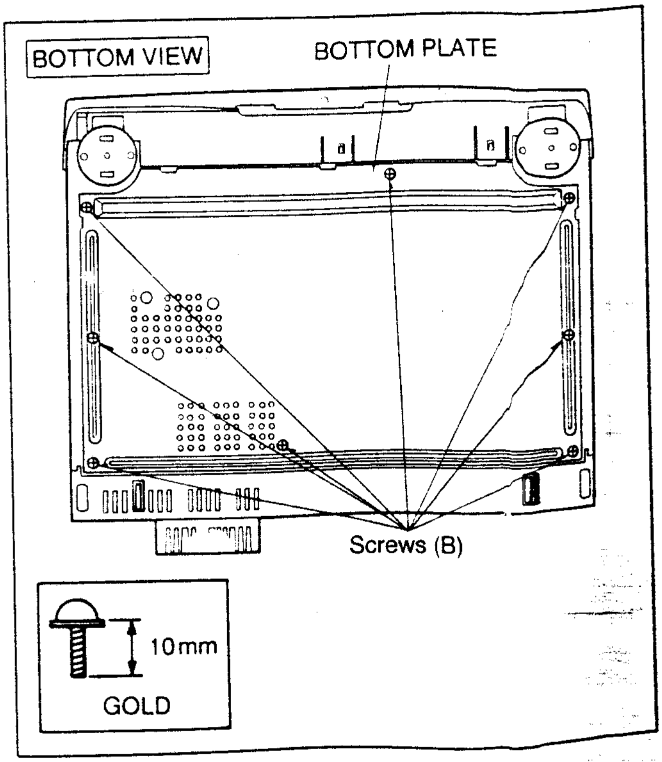

BOTTOM VIEW
BOTTOM PLATE
Screws (B)
10mm
GOLD

Fig. D3

3. REMOVAL OF THE FRONT PANEL UNIT

Remove...... Screws (C)
Unlock .... 8 Tabs (D)

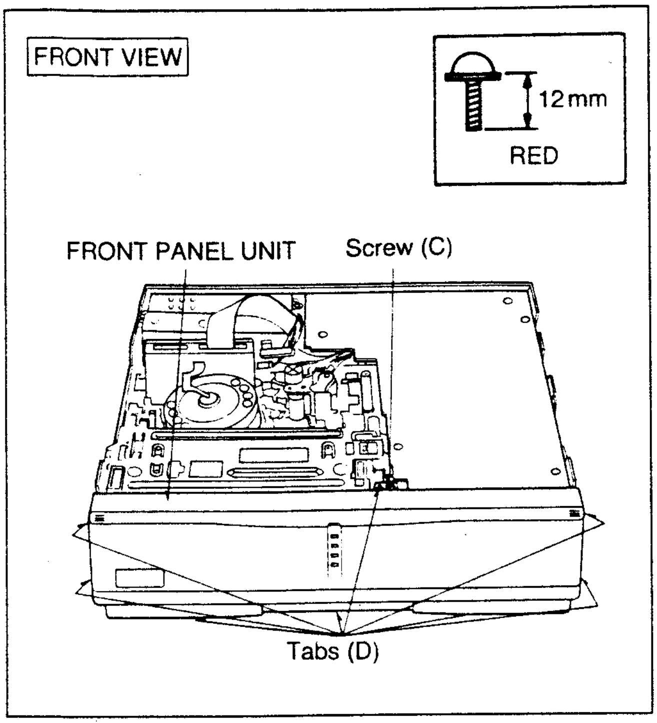

FRONT VIEW
12mm
RED
FRONT PANEL UNIT
Screw (C)
Tabs (D)

Fig. D4

4. REMOVAL OF THE TIMER C.B.A. & THE VR C.B.A.

Unlock .... 9 Tabs (F)

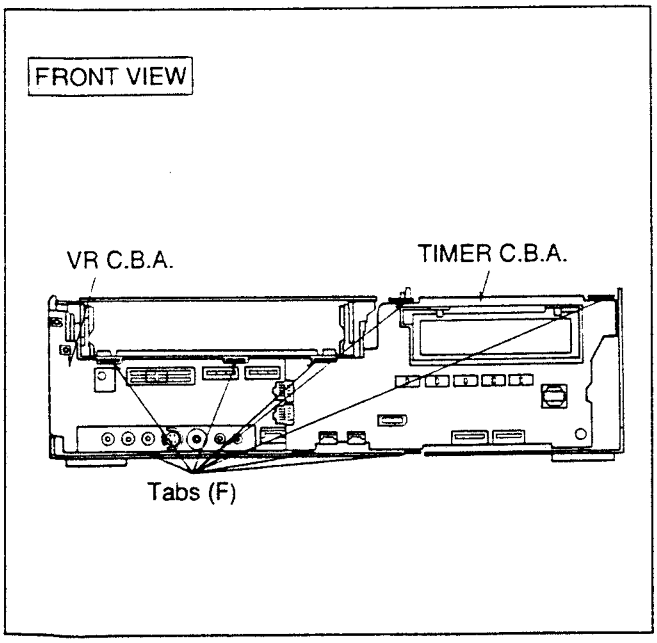

FRONT VIEW
VR C.B.A.
TIMER C.B.A.
Tabs (F)

Fig. D5

5. REMOVAL OF THE MAIN C.B.A. & THE POWER SUPPLY UNIT

REMOVAL OF THE MAIN C.B.A.

Remove...... 3 Screws (G)
Remove...... 2 Screws (H)
Unlock .... Tab (I)

REMOVAL OF THE POWER SUPPLY UNIT

Remove...... 2 Screws (J)
Remove...... Screws (K)
Unlock .... 2 Screws (L) and The HEAT SINK COVER
Remove...... Screw (M) and The HEAT SINK

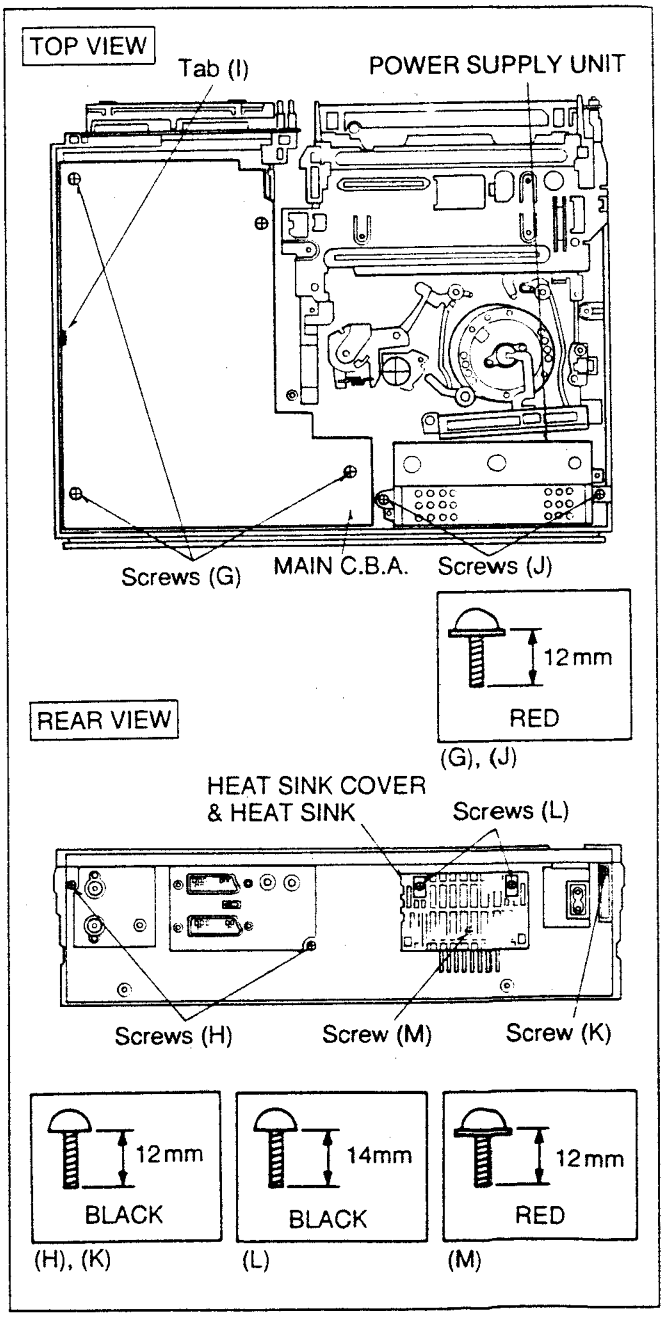

TOP VIEW
Tab (I)
POWER SUPPLY UNIT
Screws (G)
MAIN C.B.A.
Screws (J)
12mm
RED
(G), (J)
REAR VIEW
HEAT SINK COVER
& HEAT SINK
Screws (L)
Screws (H)
Screw (M)
Screw (K)
12mm
BLACK
(H), (K)
14mm
BLACK
(L)
12mm
RED
(M)

Fig. D6

6. REMOVAL OF THE TBC C.B.A.

Remove...... 4 Screws (N)

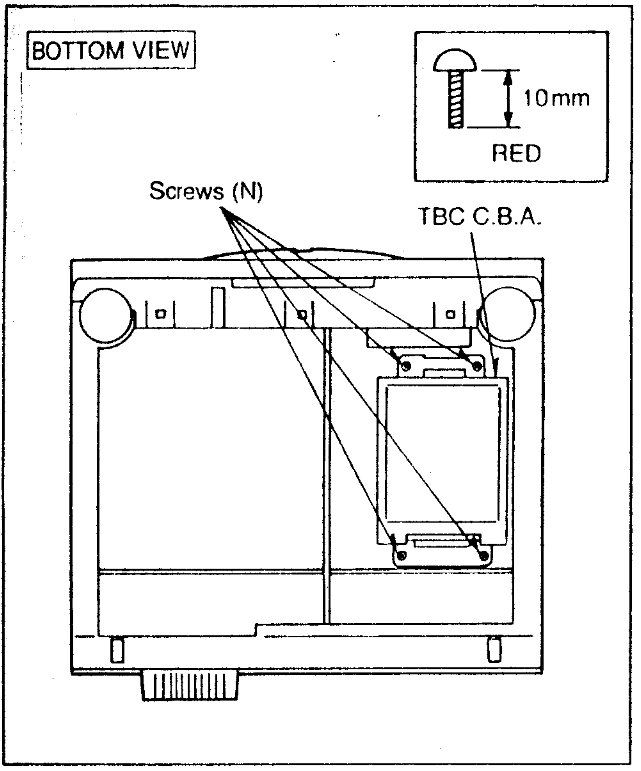

BOTTOM VIEW
10mm
RED
Screws (N)
TBC C.B.A.

Fig. D7

7. PACK SERVICING POSITION

CAUTION:
Confirm the isolation between Mechanical Chassis and Main C.B.A. before connecting Main AC.

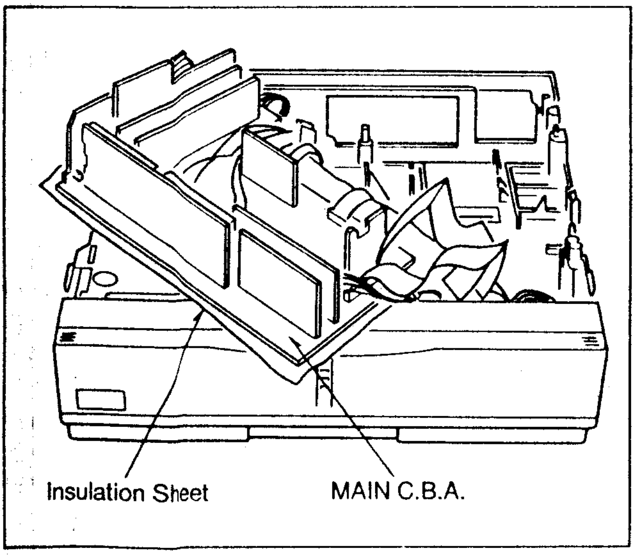

Insulation Sheet
MAIN C.B.A.

Fig. D8

8. REMOVAL OF THE CLEANER ARM UNIT

1. Unlock the locking portion (O).
2. Pull up the Cleaner Arm Unit.

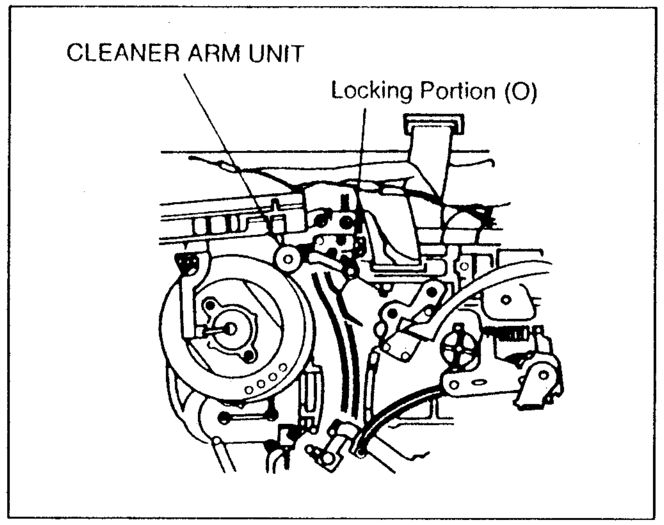

CLEANER ARM UNIT
Locking Portion (O)

Fig. D9

2-2. MECHANICAL ADJUSTMENT PROCEDURES

The mechanical chassis of this model is the K Mechanical Chassis.
Therefore refer to the Service Manual for K Mechanical Chassis. (Order No. VRD9307M131)

CAUTIONS:

To make a Adjustment Mode for Tape interchangeability, connect a Jumper wire which has been cut as shown in Fig. M1.
(Auto Tracking is turned off)
After finishing the adjustment, disconnect the jumper wire.

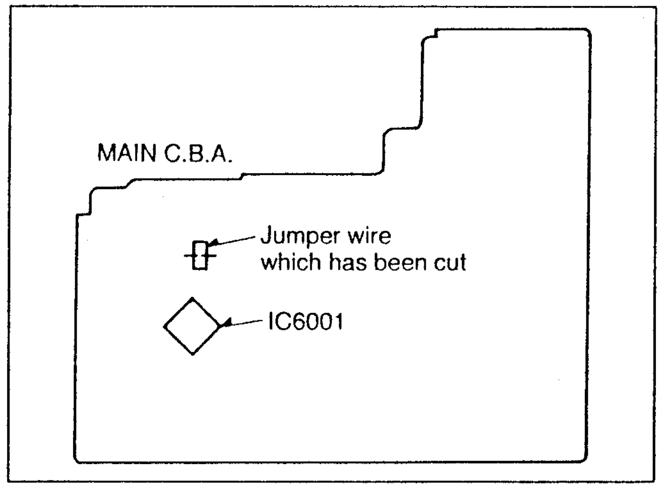

MAIN C.B.A.
Jumper wire which has been cut
IC6001

Fig. M1

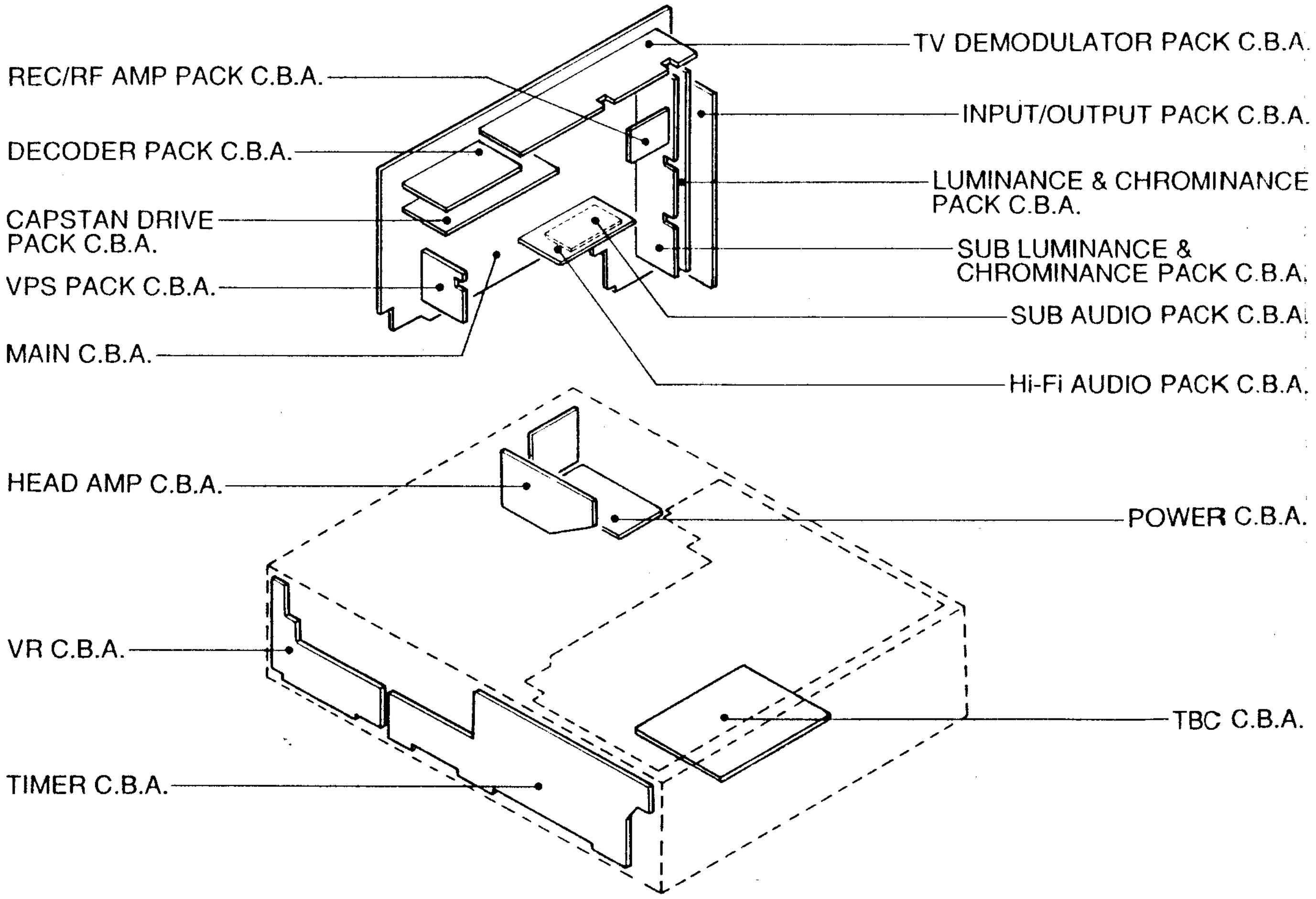
2-3. DISASSEMBLY PROCEDURES OF MECHANISM

The mechanical chassis of this model is the K Mechanical Chassis.
Therefore refer to the Service Manual for K Mechanical Chassis. (Order No. VRD9307M131)

2-4. ASSEMBLY PROCEDURES OF MECHANISM

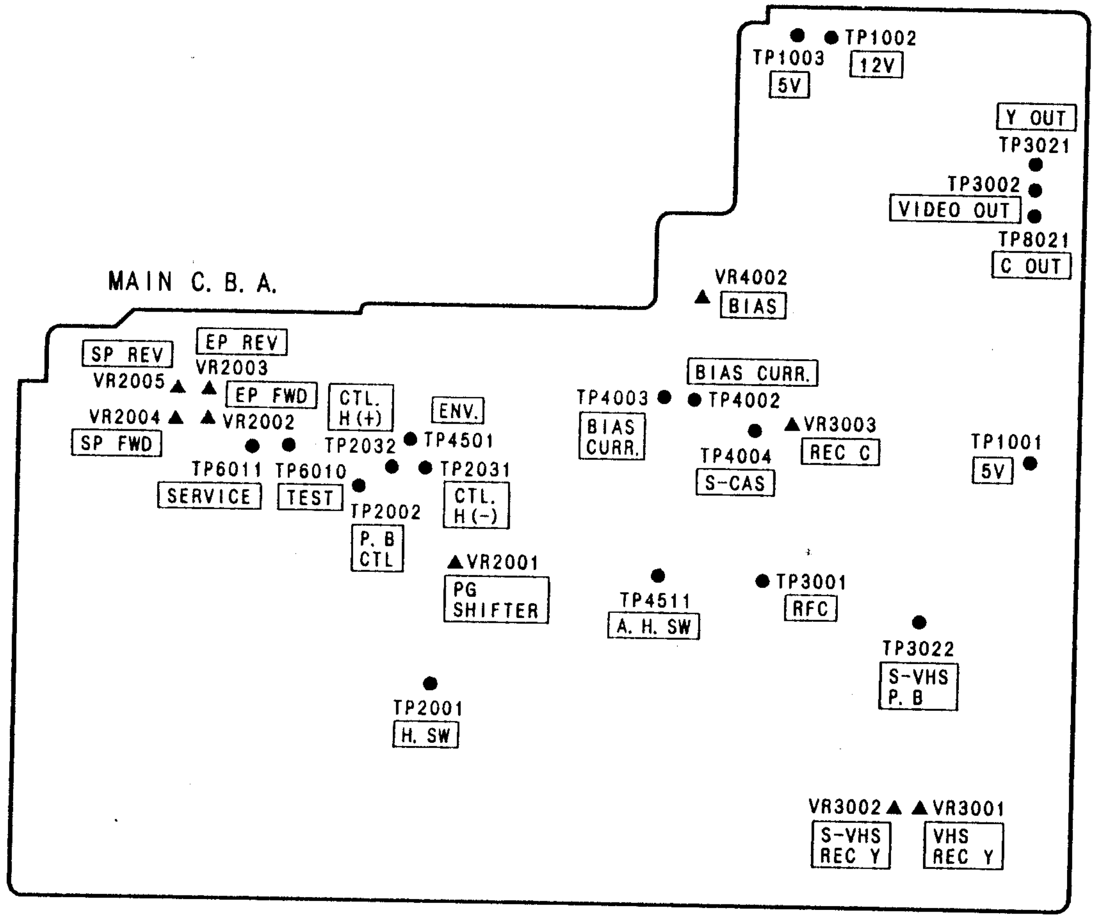
The mechanical chassis of this model is the K Mechanical Chassis.
Therefore refer to the Service Manual for K Mechanical Chassis. (Order No. VRD9307M131)

CIRCUIT BOARD LAYOUT

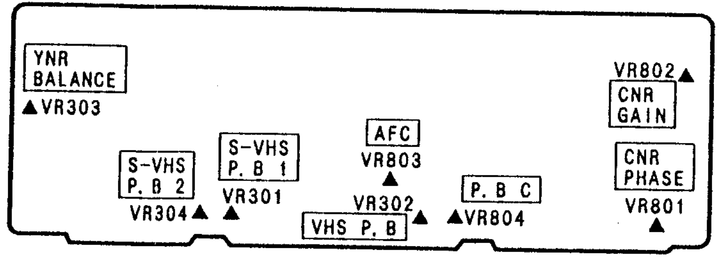

REC/RF AMP PACK C.B.A.
DECODER PACK C.B.A.
CAPSTAN DRIVE PACK C.B.A.
VPS PACK C.B.A.
MAIN C.B.A.
TV DEMODULATOR PACK C.B.A.
INPUT/OUTPUT PACK C.B.A.
LUMINANCE & CHROMINANCE PACK C.B.A.
SUB LUMINANCE & CHROMINANCE PACK C.B.A.
SUB AUDIO PACK C.B.A.
Hi-Fi AUDIO PACK C.B.A.
HEAD AMP C.B.A.
POWER C.B.A.
VR C.B.A.
TBC C.B.A.
TIMER C.B.A.

LOCATION OF TEST POINTS & CONTROLS

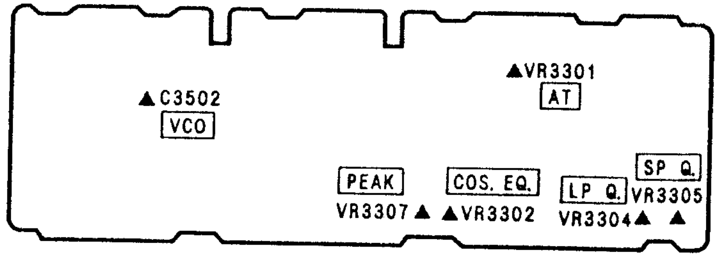
MAIN C. B. A.


TP1003
5V
TP1002
12V
Y OUT
TP3021
TP3002
VIDEO OUT
TP8021
C OUT
VR4002
BIAS
SP REV
VR2005
EP REV
VR2003
EP FWD
VR2004
VR2002
SP FWD
CTL.
H(+)
ENV.
TP2032
TP4501
TP6011
SERVICE
TP6010
TEST
TP2031
CTL.
H(-)
TP2002
P. B
CTL
BIAS CURR.
TP4003
TP4002
BIAS
CURR.
VR3003
TP4004
REC C
S-CAS
TP1001
5V
VR2001
PG
SHIFTER
TP4511
A. H. SW
TP3001
RFC
TP3022
S-VHS
P. B
TP2001
H. SW
VR3002
VR3001
S-VHS
REC Y
VHS
REC Y

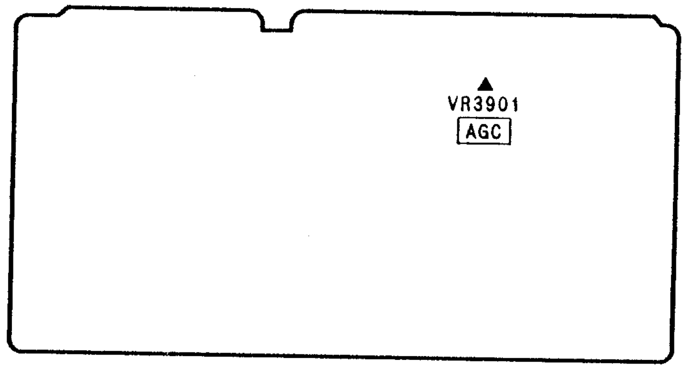
LUMINANCE & CHROMINANCE PACK C. B. A.


YNR
BALANCE
VR303
S-VHS
P. B 2
VR304
S-VHS
P. B 1
VR301
AFC
VR803
VR302
VHS P. B
P. B C
VR804
VR802
CNR
GAIN
CNR
PHASE
VR801

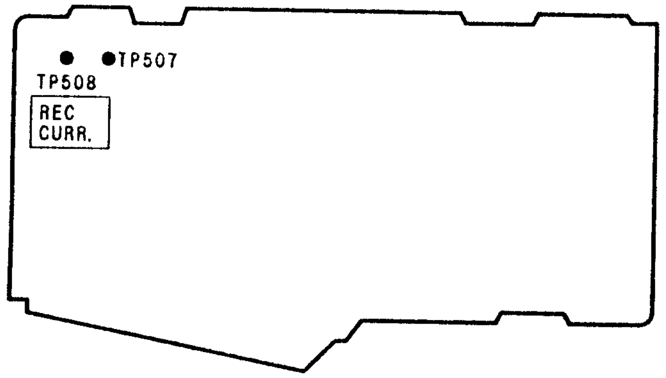
SUB LUMINANCE & CHROMINANCE PACK C. B. A.


C3502
VCO
VR3301
AT
PEAK
VR3307
COS. EQ.
VR3302
LP Q.
VR3304
SP Q.
VR3305

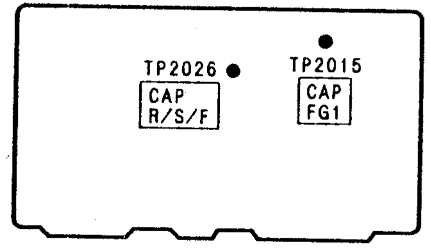
INPUT/OUTPUT PACK C. B. A.



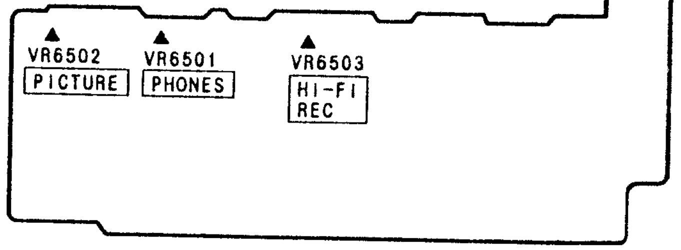
HEAD AMP C. B. A.


TP508
TP507
REC
CURR.

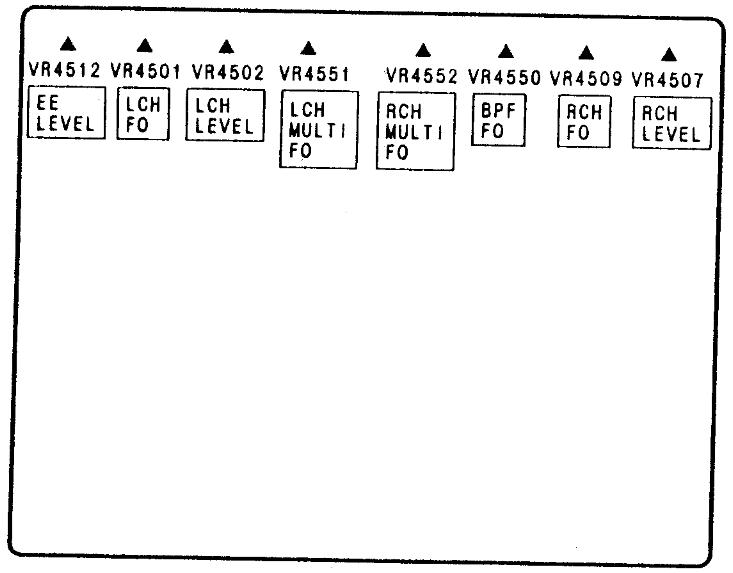
CAPSTAN DRIVE PACK C. B. A.


TP2026
CAP
R/S/F
TP2015
CAP
FG1

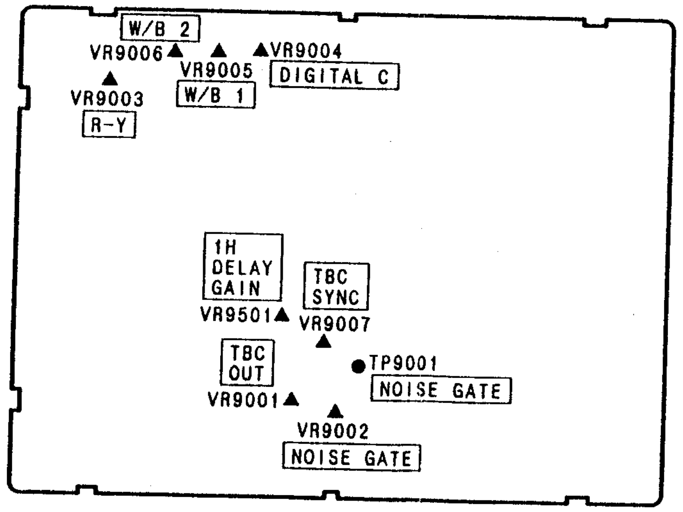
OPERATION C. B. A.


VR6502
PICTURE
VR6501
PHONES
VR6503
Hi-Fi
REC

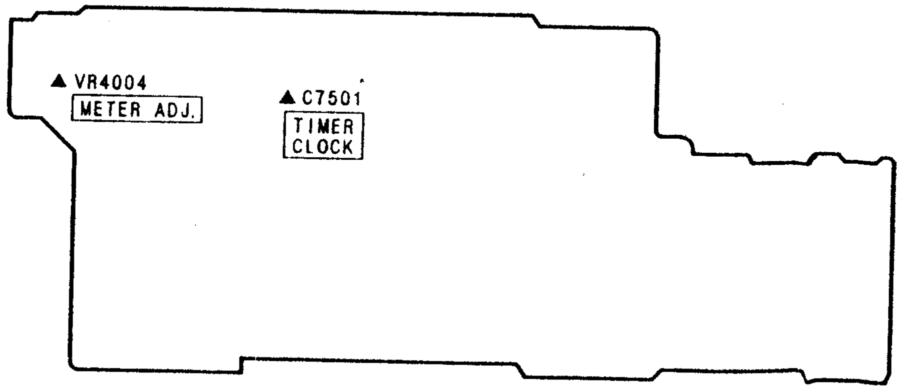
Hi-Fi AUDIO PACK C. B. A.


VR4512
EE
LEVEL
VR4501
LCH
FO
VR4502
LCH
LEVEL
VR4551
LCH
MULTI
FO
VR4552
RCH
MULTI
FO
VR4550
BPF
FO
VR4509
RCH
FO
VR4507
RCH
LEVEL

TBC C. B. A.


W/B 2
VR9006
VR9005
W/B 1
VR9004
DIGITAL C
VR9003
R-Y
1H
DELAY
GAIN
VR9501
TBC
SYNC
VR9007
TBC
OUT
VR9001
TP9001
NOISE GATE
VR9002
NOISE GATE

TIMER C. B. A.


VR4004
METER ADJ.
C7501
TIMER
CLOCK

2-5. ELECTRICAL ADJUSTMENT PROCEDURES

This section provides complete adjustment procedures required for electric circuits of VHS Video Cassette Recorders.

2-6-1. TEST EQUIPMENT

To perform electrical adjustments following equipment is required.

1. Dual-Trace Oscilloscope. (More than 35 MHz)
    Voltage Range:0.005-5V/div
    Frequency Range:DC-35MHz
    Probes:10:1 OR 1:1
2. Frequency Counter.
    Frequency Range:0-10MHz
    Probes:1:1
3. Universal Counter.
4. Digital Volt Meter. (D.V.M.)
5. Video Sweep Generator.
6. Sine Wave Generator.
7. Video Pattern Generator.
8. VHS Alignment Tape. (VFJ8125H3F)
9. VHS Blank Tape.
10. Monitor.
11. Plastic Tip Driver.
12. DC Power Supply.

2-5-2. PREPARATION

During adjustment, set each selector as follows: when no indication in the procedure.

NORMAL/Y/C/TEST SIGNAL SW (REAR)...NORMAL
VIDEO MODE SW......................AUTO
AI SW..............................ON
EDIT MODE SW.......................RECORDER
HIFI/NORMAL MIX SW.................OFF
PICTURE VR.........................CENTRE FIX
HIFI REC LEVEL VR..................CENTRE FIX
CHANNEL............................A1/A2/A3
(Set to signal input terminal number)
TBC SW.............................OFF
16:9 SW............................AUTO
AV3 INPUT SELECT SW................S-VIDEO/LINE
(Set to signal input terminal)
S-VHS SW...........................ON

2-5-3. HOW TO READ ADJUSTMENT PROCEDURES

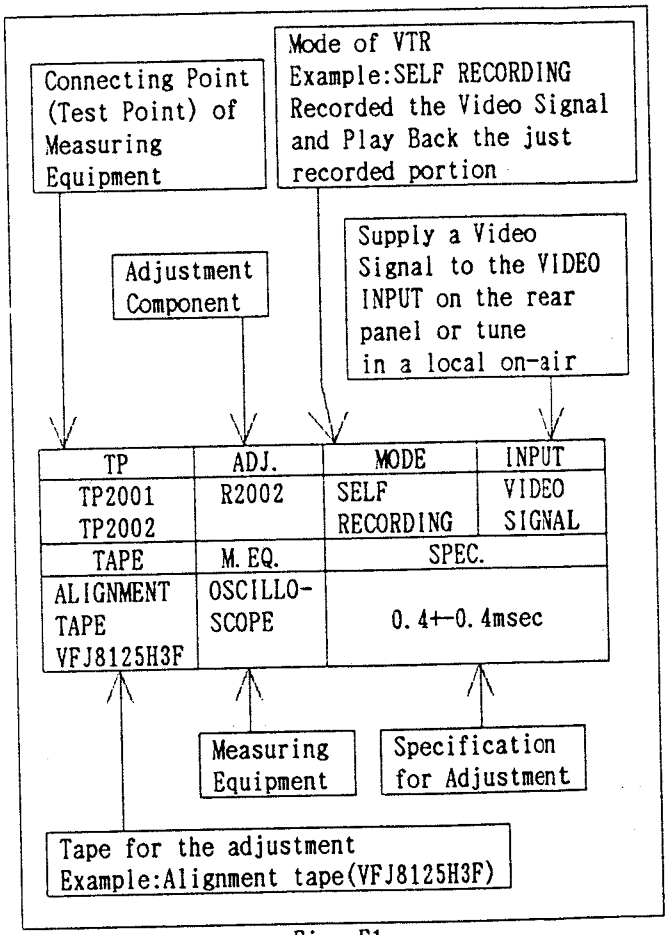

Connecting Point (Test Point) of Measuring Equipment
Mode of VTR Example:SELF RECORDING Recorded the Video Signal and Play Back the just recorded portion
Adjustment Component
Supply a Video Signal to the VIDEO INPUT on the rear panel or tune in a local on-air
TP
ADJ.
MODE
INPUT
TP2001
TP2002
R2002
SELF RECORDING
VIDEO SIGNAL
TAPE
M.EQ.
SPEC.
ALIGNMENT TAPE VFJ8125H3F
OSCILLO-SCOPE
0.4+-0.4msec
Measuring Equipment
Specification for Adjustment
Tape for the adjustment Example:Alignment tape(VFJ8125H3F)

Fig. E1

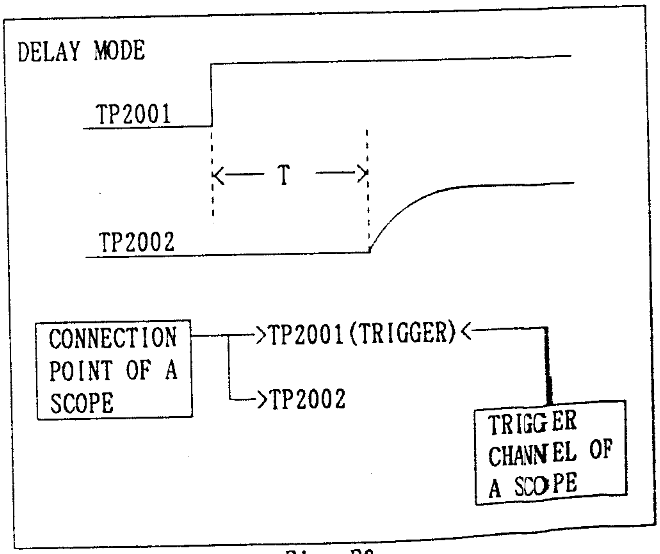

DELAY MODE
TP2001
T
TP2002
CONNECTION POINT OF A SCOPE
>TP2001(TRIGGER)<
>TP2002
TRIGGER CHANNEL OF A SCOPE

Fig. E2

SERVO SECTION

2-5-4 PG SHIFTER ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP2001 (TEST LAND) VIDEO OUT	VR2001	PLAYBACK	
TAPE	**M. E Q.**	**SPEC**	
ALIGNMENT TAPE VFJ8125H3F	OSCILLO- SCOPE	8.0+-0.5(H)	

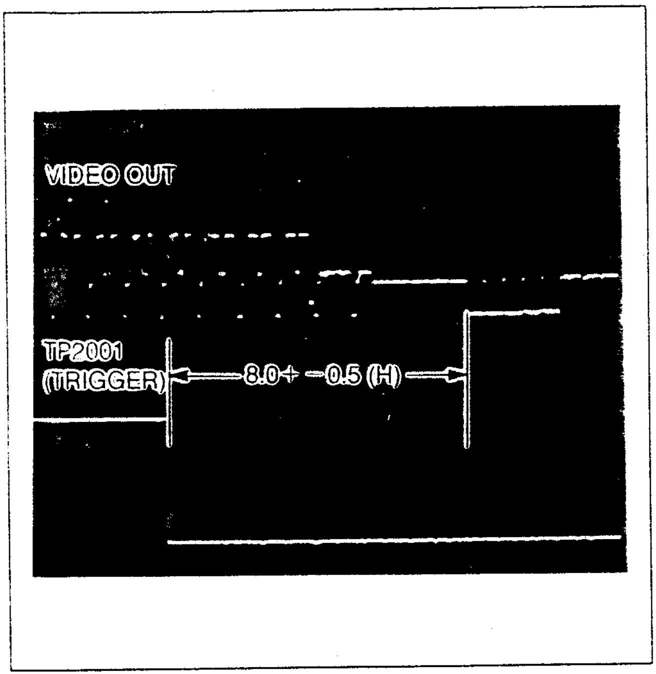


Fig. E3

2-5-5. SLOW TRACKING ADJUSTMENT

TP	ADJ.	MODE	INPUT
MONITOR SCREEN	VR2004 (SP) VR2002 (LP)	(SELF RECORDED) SLOW	CCIR PATTERN
TAPE	**M. E Q.**	**SPEC**	
BLANK TAPE	MONITOR TV	Noise bar on the monitor screen is minimized. (Shown in Fig. E5)	

Note: 1. Before this adjustment, connect a jumper wire which has been cut as shown in Fig. E4.

2. After connecting a jumper wire, press the TRACKING (+) and (-) buttons on the Remote Controller simultaneously to set the tracking to centre fix position.

3. After this adjustment, disconnect a jummper wire.

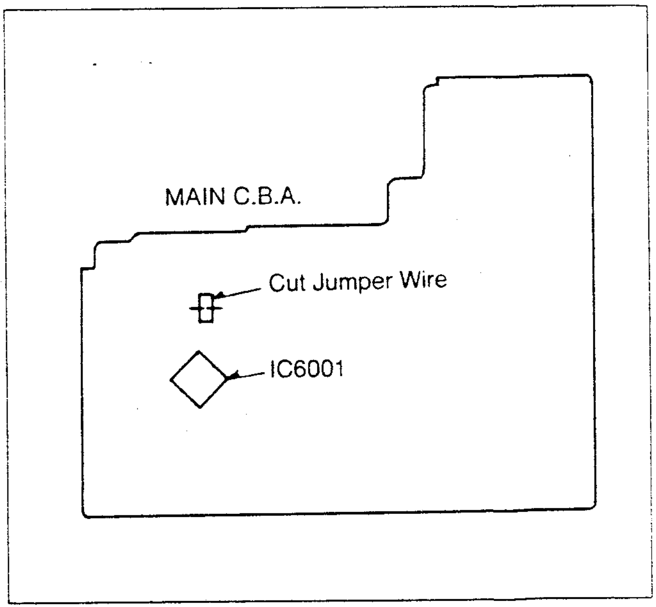


Fig. E4

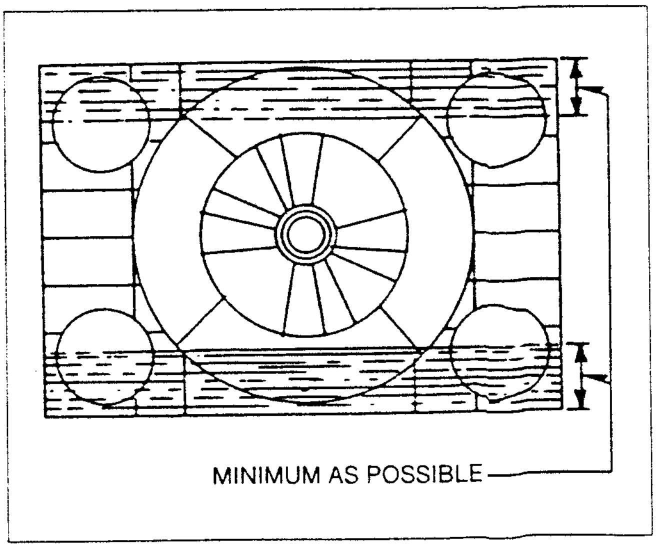


Fig. E5

2-5-6. REVERSE SLOW TRACKING ADJUSTMENT

TP	ADJ.	MODE	INPUT
MONITOR SCREEN	VR2005 (SP) VR2003 (LP)	(SELF RECORDED) REV SLOW	CCIR PATTERN
TAPE	**M. EQ.**	**SPEC**	
BLANK TAPE	MONITOR TV	Noise bar on the monitor screen is minimized. (Shown in Fig. E5)	

REV SLOW:REVERSE SLOW

Note:1. Before this adjustment, connect a jumper which has been cut as shown in Fig. E4.

2. After connecting a jumper wire, press the TRACKING (+) and (-) buttons on the Remote Controller simultaneously to set the tracking to centre fix position.

3. After this adjustment, disconnect a jummper wire.

2-5-7. AUTO TRACKING GAIN ADJUSTMENT

TP	ADJ.	MODE	INPUT
PP3011-1	VR3301	STOP	SINEWAVE 4MHz/200mVp-p (TO PP3011-2)
TAPE	**M. EQ.**	**SPEC**	
	SINEWAVE GENE./ D.V.M.	3.1+-0.1(V)	

Note:1. After connecting the Sinewave Generator to PP3011-2, set the signal level to 4MHz/200mVp-p.

LUMINANCE & CHROMINANCE SECTION

2-5-8. ARTIFICIAL PAL FREE RUN ADJUSTMENT

TP	ADJ.	MODE	INPUT
IC802-9 (TL803)	VR803	STOP	
TAPE	**M. EQ.**	**SPEC**	
	FREQUENCY COUNTER/ SINEWAVE GENERATOR	15735+-100(Hz)	

Note:1. Supply +5V DC to IC802-27(TL302).

2. Turn VR803 to maximum frequency, then adjust VR803 until the specification.

2-5-9. RECORDING CURRENT ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP507(HOT) TP508(GND)	VR3001 (VHS Y) VR3002 (S-VHS Y) VR3003(C)	SP RECORDING	PAL COLOUR BAR
TAPE	**M. EQ.**	**SPEC**	
S-VHS BLANK TAPE	OSCILLO-SCOPE	VHS Y :110+-5(mVp-p) S-VHS Y:120+-5(mVp-p) C :28+-2(mVp-p)	

Note:1. Set the AI SW to OFF position.

2. When adjusting the S-VHS Luminance level, set the S-VHS SW to ON position.

3. When adjusting the VHS Luminance level, set the S-VHS SW to OFF position.

4. Adjust the Luminance level until the peak level of V-SYNC is 110+-5mVp-p(VHS MODE), 120+-5mVp-p(S-VHS MODE).

5. When adjusting the Chrominance level. Supply +5V DC to PP3001-6 (TL14) to eliminate Luminance component.

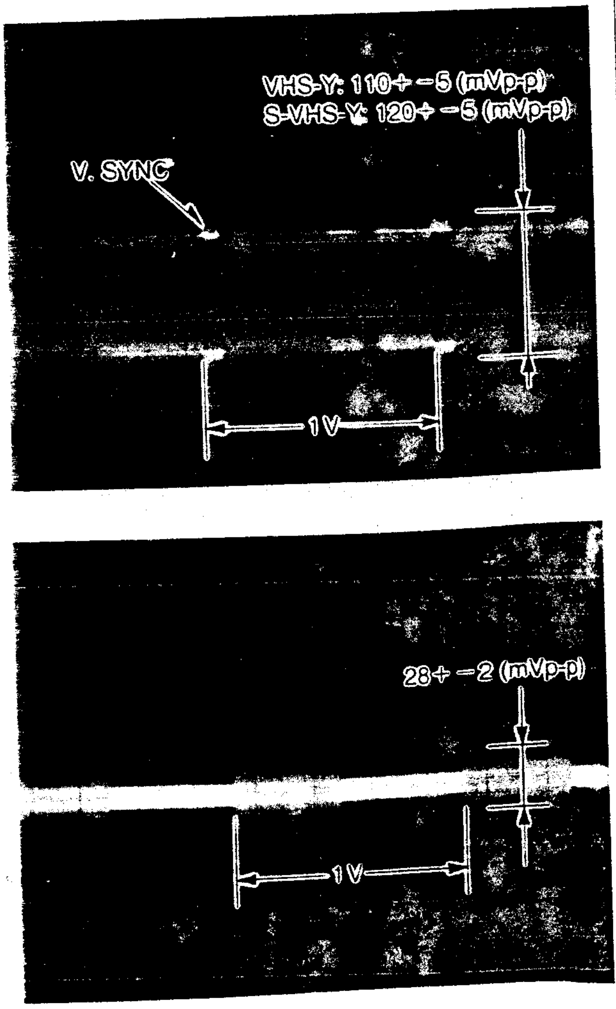
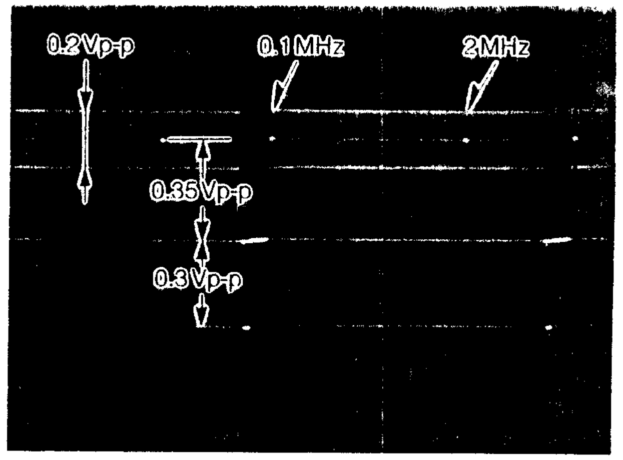


Fig. E6

2-5-10. VHS FREQUENCY RESPONSE ADJUSTMENT

TP	ADJ.	MODE	INPUT
VIDEO OUT	VR3305 (SP) VR3304 (LP)	SP/LP (SELF RECORDED) PLAYBACK	VIDEO SWEEP SIGNAL (Shown in Fig. E7)
TAPE	**M. EQ.**	**SPEC**	
BLANK TAPE	OSCILLO-SCOPE/ VIDEO SWEEP GENERATOR	SP:0+-1(dB) (90-110%) LP:0+-1(dB) (90-110%)	

Note:1. Set the Video Sweep Signal as shown in Fig. E7.
2. Set the AI and S-VHS SW to OFF position.
3. Set the VIDEO MODE SW to B/W position.



CONDITION: BURST SIGNAL OFF
75 ohm TERMINATED

Fig. E7

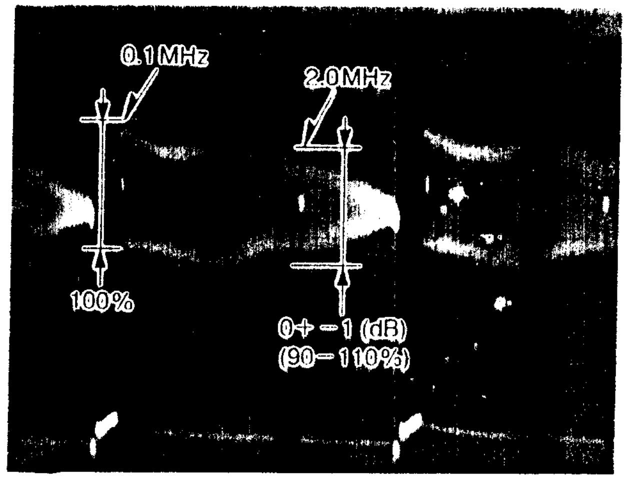
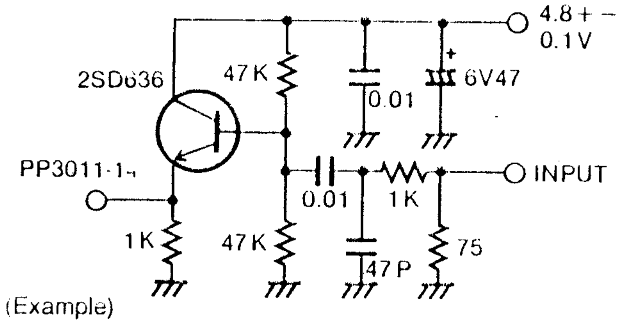


Fig. E8

2-5-11. RF PEAK FREQUENCY ADJUSTMENT

TP	ADJ.	MODE	INPUT
PP3011-18	VR3307	PLAYBACK	VIDEO SWEEP SIGNAL (PP3014-14)
TAPE	**M. EQ.**	**SPEC**	
ALIGNMENT TAPE (VFJ8125H3F)	OSCILLO-SCOPE/ VIDEO SWEEP GENERATOR	SIGNAL LEVEL AT 7MHz PORTION IS MAXIMUM	

Note:1. Connect the Service Circuit as shown in Fig. E9.
2. Disconnect P501(from MAIN C.B.A. to HEAD AMP PACK C.B.A.).
3. Set VR3302 to centre position.
4. Connect a jumper wire between PP3011-5 and GND.
5. Set the Video Sweep Signal Generator (video signal only) as shown in Fig. E10.
6. Supply set up video sweep signal to PP3011-14 via Service Circuit.
7. Adjust VR3307 until the signal level at 7MHz portion is maximum as shown in Fig. E11.
8. After this adjustment, connect P501.



(Example)
75 ohm: ERDS2TJ750 0.01μ: ECCF1H104ZF
1Kohm: ERDS2TJ102 47P: ECCF1H470JC
47Kchm: ERDS2TJ473 6V47μ: ECEA0JK470

Fig. E9

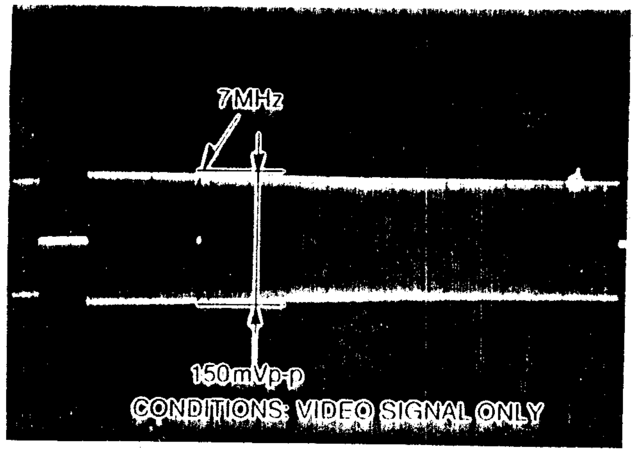


Fig. E10

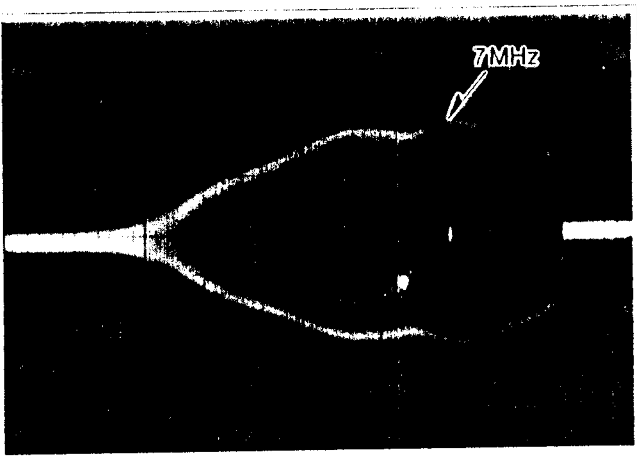
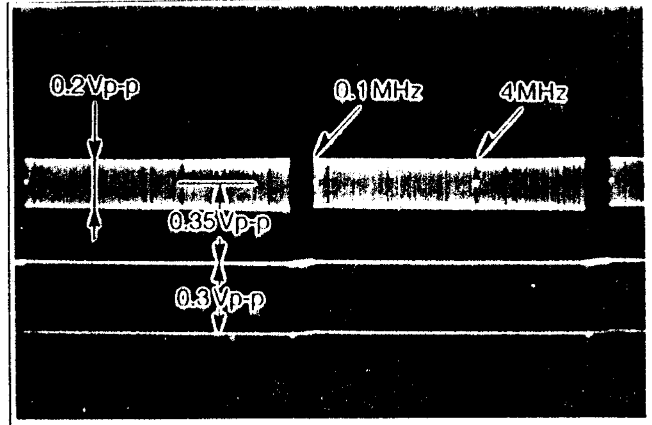


Fig. E11

2-5-12. S-VHS FREQUENCY RESPONSE ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP3021	VR3302 (SP)	SP (SELF RECORDED) PLAYBACK	VIDEO SWEEP SIGNAL (P3002-10)
TAPE	**M. EQ.**	**SPEC**	
S-VHS BLANK TAPE	OSCILLO-SCOPE/ VIDEO SWEEP GENERATOR	SP:-4.5+-1(dB) (55-70%)	

Note:1. Before this adjustment, RF PEAK ADJUSTMENT must be done.
2. Set the Video Sweep Signal as shown in Fig. E12.
3. Set the AI SW to OFF position.
4. Connect a jumper wire between PP3003-5 and GND.
5. After this adjustment, disconnect the jumper wire.



CONDITION: BURST SIGNAL OFF
75 ohm TERMINATED

Fig. E12

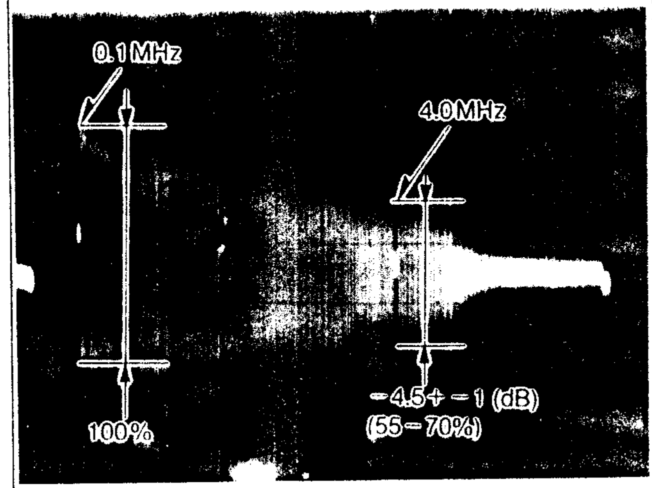


Fig. E13

2-5-13. VHS PLAYBACK LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP3021(Y) TP8021(C)	VR302(Y) VR804(C)	SP (SELF RECORDED) PLAYBACK	PAL COLOUR BAR
TAPE	**M. EQ.**	**SPEC**	
BLANK TAPE	OSCILLO-SCOPE	Y:2.0+-0.1(Vp-p) C:1.1+-0.1(Vp-p)	

Note:1. Set the S-VHS SW to OFF position.

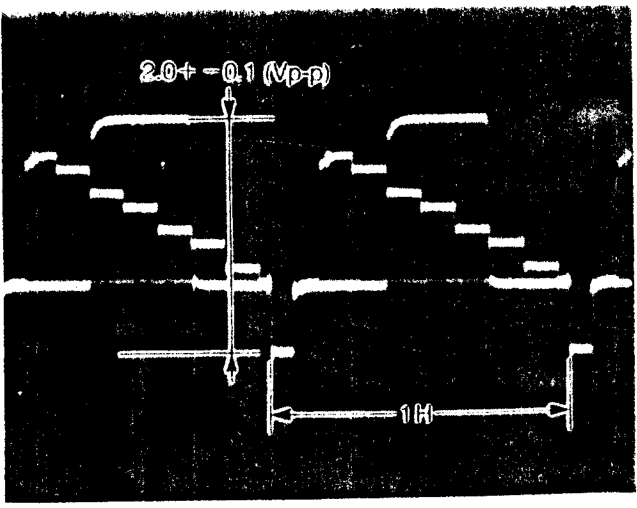


Fig. E14

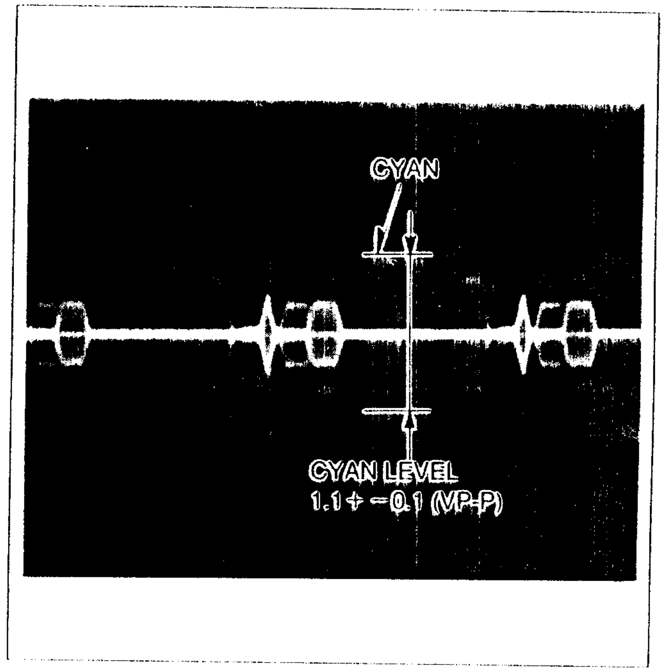


Fig. E15

2-5-14. S-VHS PLAYBACK LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP3022(Y1) TP3021(Y2)	VR301(Y1) VR304(Y2)	SP (SELF RECORDED) PLAYBACK	PAL COLOUR BAR
TAPE	**M. EQ.**	**SPEC**	
S-VHS BLANK TAPE	OSCILLO-SCOPE	Y1:0.43+-0.01(Vp-p) Y2:2.0+-0.01(Vp-p)	

Note:1. Set the S-VHS SW to ON position
2. Before this adjustment, VHS PLAYBACK LEVEL ADJUSTMENT must be done.

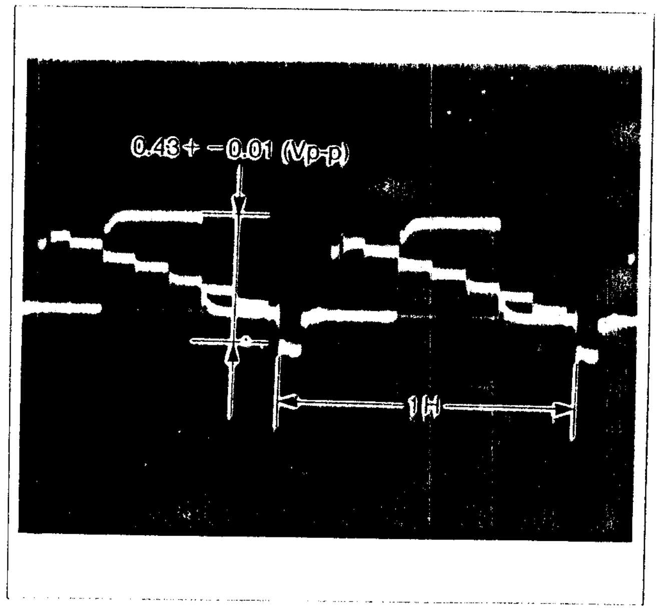


Fig. E16

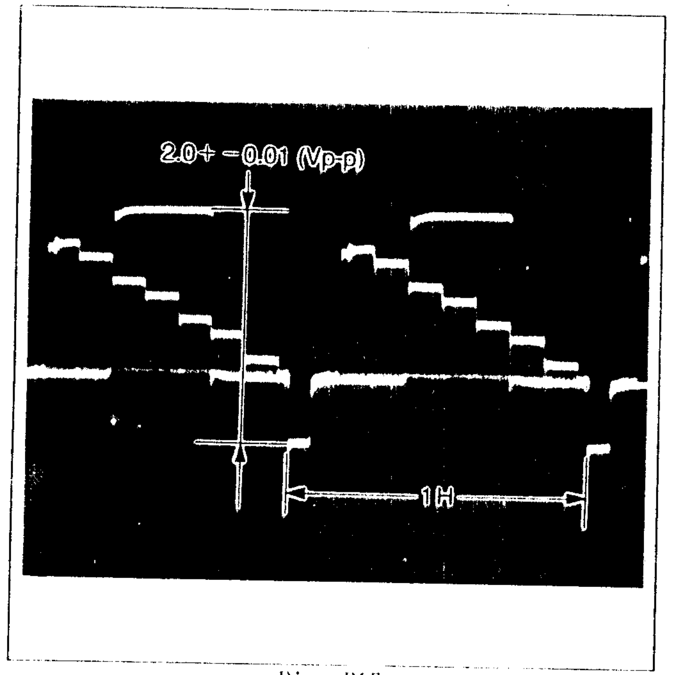


Fig. E17

2-5-15. YNR ADJUSTMENT

TP	ADJ.	MODE	INPUT
IC301-34	VR303	LP RECORDING	PAL COLOUR BAR
TAPE	**M. EQ.**	**SPEC**	
BLANK TAPE	OSCILLO-SCOPE	WAVEFORM IS MINIMUM	

Note:1. Connect the capacitor(1500pF) between IC301-34 and GND as shown in Fig.E18.

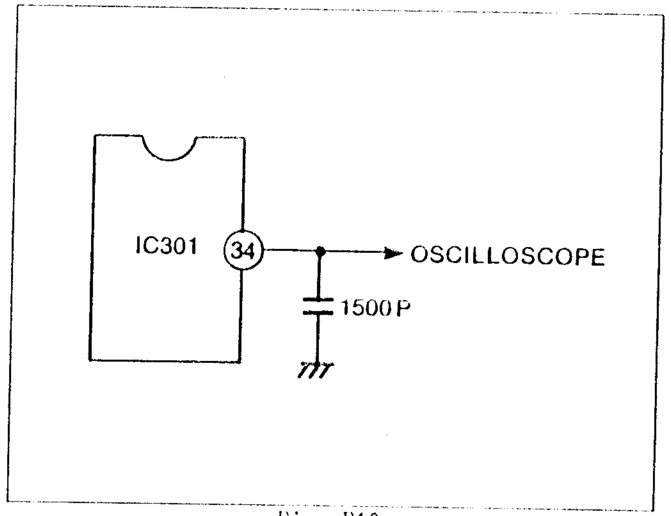


Fig. E18

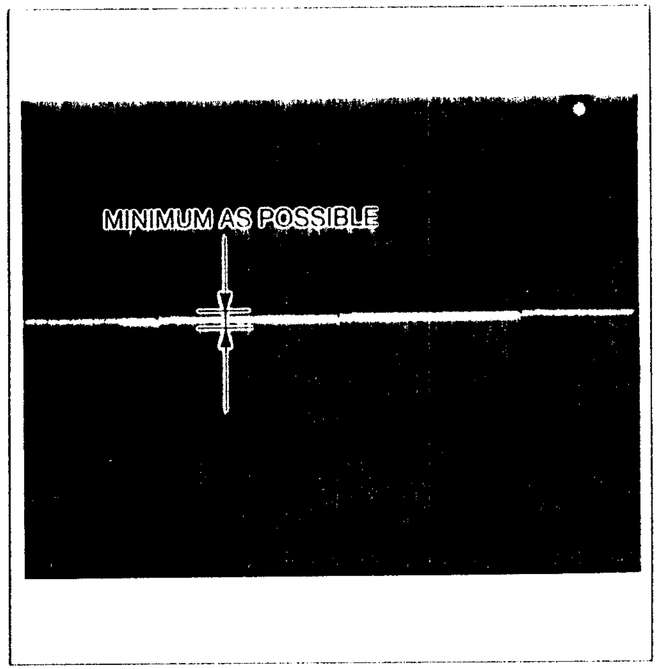


Fig. E19

2-5-16. CHROMINANCE RECURSIVE ADJUSTMENT

TP	ADJ.	MODE	INPUT
IC801-7	VR801 VR802	(SELF RECODRED) PLAYBACK	PAL COLOUR BAR
TAPE	**M. EQ.**	**SPEC**	
BLANK TAPE	OSCILLO-SCOPE	WAVEFORM IS MINIMUM	

Note:1. Before this adjustment, RECORDING CURRENT and YNR ADJUSTMENT must be done.
2. Adjust VR801 and VR802 alternately until the amplitude of the signal at IC801-7 is minimum.

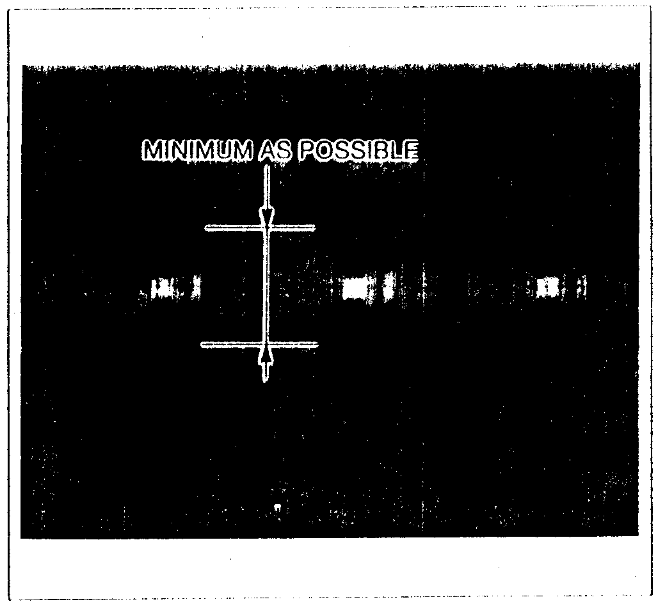


Fig. E20

2-5-17. 1H DELAY GAIN ADJUSTMENT

TP	ADJ.	MODE	INPUT
P9001-1 P9001-3	VR9501	(SELF RECORDED) PLAYBACK	PAL COLOUR BAR
TAPE	**M. EQ.**	**SPEC**	
BLANK TAPE	OSCILLO-SCOPE	SIGNAL LEVEL OF P9001-3 +-0.03(Vp-p)	

Note:1. Set the S-VHS and TBC SW to OFF position.
2. Connect the oscilloscope to P9001-1 and 3.
3. Adjust VR9501 until the level of P9001-1 is level of P9001-3 +- 0.03Vp-p.

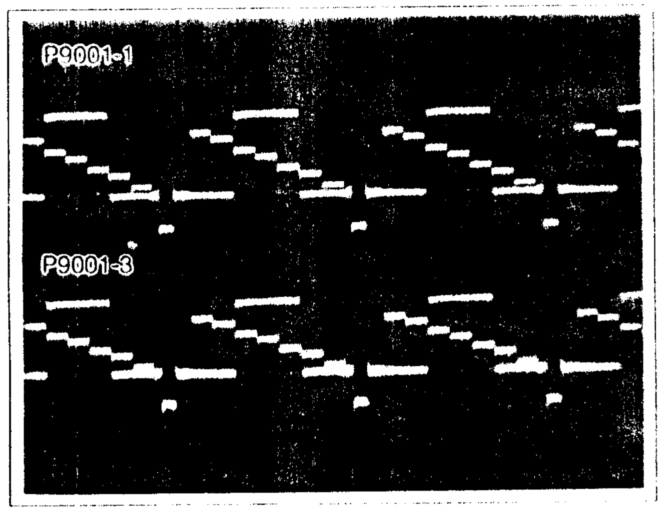


Fig. E21

2-5-18. TBC NOISE GATE ADJUSTMENT

TP	ADJ	MODE	INPUT
TP9001	VR5002	(SELF RECORDED) PLAYBACK	PAL COLOUR BAR
TAPE	**M. EQ.**	**SPEC**	
BLANK TAPE	OSCILLO-SCOPE	A-1.5+-0.1(usec)	

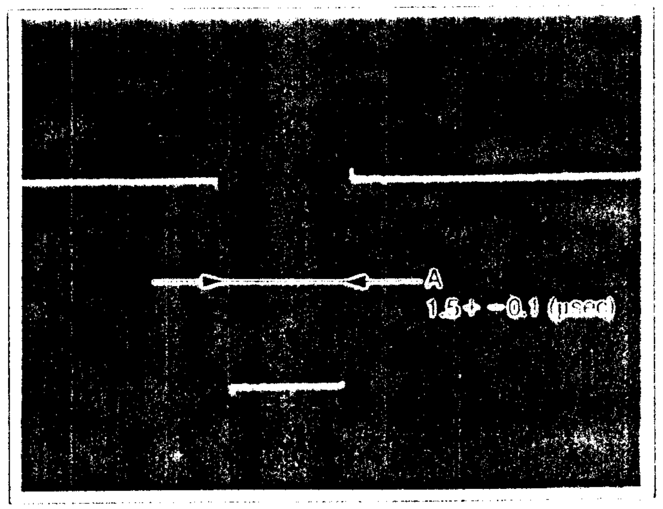


Fig. E22

2-5-19. TBC SYNC LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
P9001-1	VR9007	(SELF RECORDED) PLAYBACK	PAL COLOUR BAR
TAPE	M. EQ.	SPEC	
BLANK TAPE	OSCILLO-SCOPE	B/A=43+-2(%)	

Note:1. Set the TBC SW to ON position.
2. Set the S-VHS SW to OFF position.

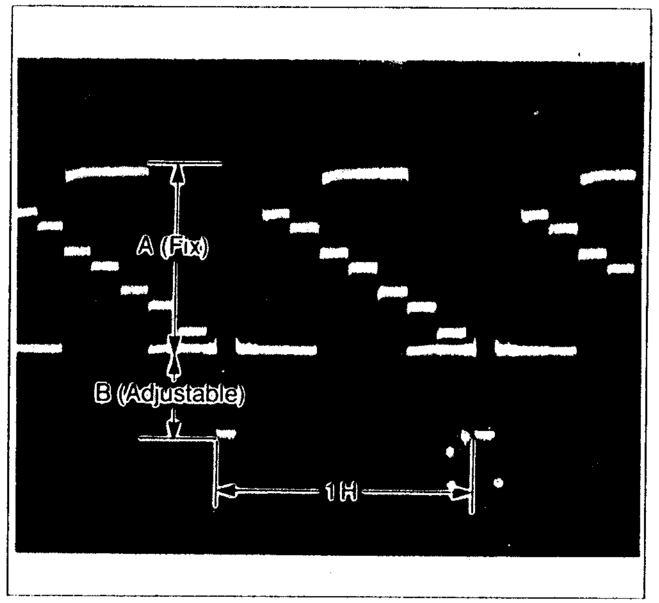


Fig. E23

2-5-20. TBC WHITE BALANCE ADJUSTMENT

TP	ADJ.	MODE	INPUT
P9001-5	VR9005 VR9006	(SELF RECORDED) PLAYBACK	PAL COLOUR BAR
TAPE	M. EQ.	SPEC	
BLANK TAPE	OSCILLO-SCOPE	SIGNAL LEVEL OF WHITE PORTION IS MINIMUM	

Note:1. Set the TBC SW to ON position.
2. Before TBC R-Y LEVEL and TBC DIGITAL CHROMINANCE LEVEL ADJUSTMENT, this adjustment must be done.
3. Adjust VR9005 and VR9006 alternately until the signal level of white portion is minimum.

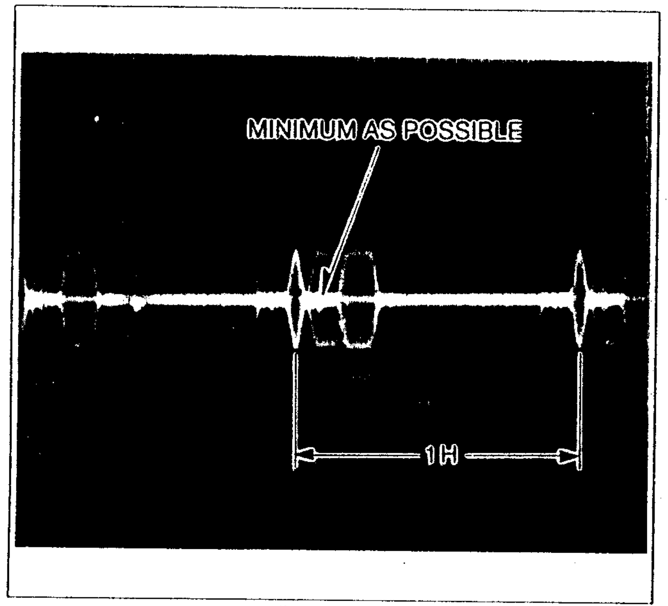


Fig. E24

2-5-21. TBC R-Y LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
VIDEO OUT	VR9003	(SELF RECORDED) PLAYBACK	PAL COLOUR BAR
TAPE	M. EQ.	SPEC	
BLANK TAPE	VECTOR-SCOPE	RED VECTOR PHASE DIFFERENCE IS +- 3°	

Note:1. Turn on the TBC SW and adjust VR9003 until the RED vector is +-3° compared with TBC off condition.
2. Confirm TBC R-Y LEVEL and TBC DIGITAL CHROMINANCE LEVEL ADJUSTMENT mutually when them adjust.

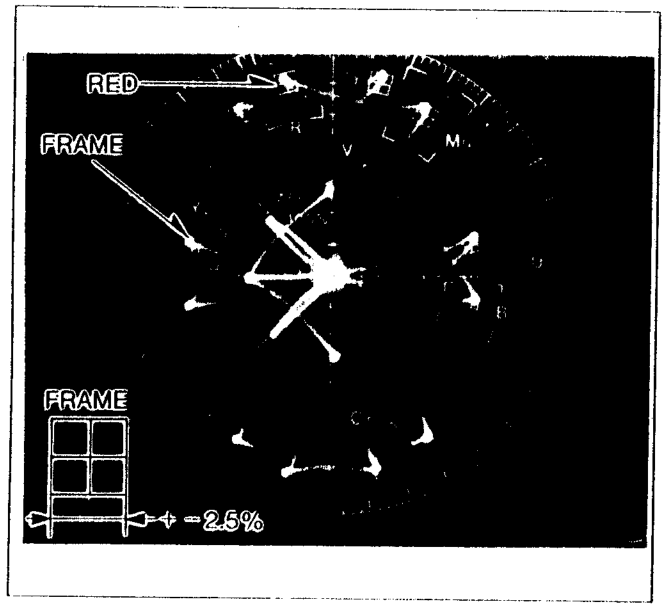


Fig. E25

2-5-22. TBC DIGITAL CHROMINANCE LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
VIDEO OUT	VR9004	(SELF RECORDED) PLAYBACK	PAL COLOUR BAR
TAPE	M. EQ.	SPEC	
BLANK TAPE	VECTOR-SCOPE	BURST LEVEL IS THE SAME	

Note:1. Turn off the TBC SW and adjust GAIN VR on vectorscope until the burst level is 75%.
2. Turn on the TBC SW and adjust VR9004 until the burst level is the same as TBC off condition(75%).

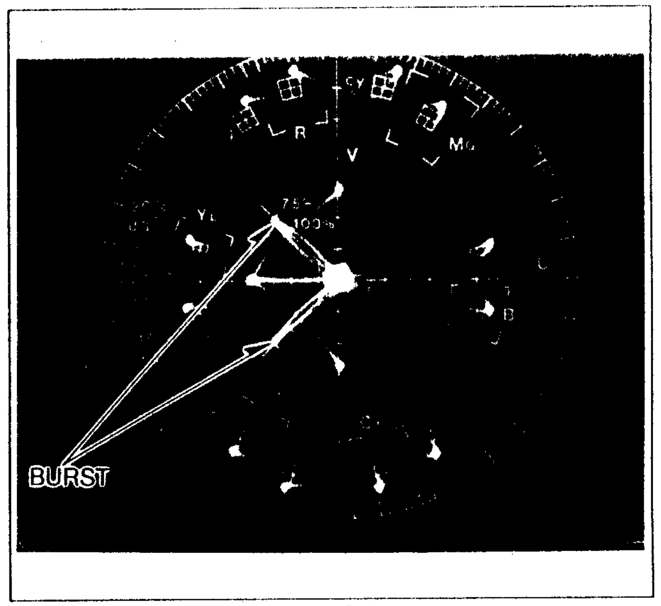


Fig. E26

2-5-23. TBC PLAYBACK LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
P9001-1	VR9001	(SELF RECORDED) PLAYBACK	PAL COLOUR BAR
TAPE	M. EQ.	SPEC	
BLANK TAPE	OSCILLO-SCOPE	100+-2.5(%)	

Note:1. Set the S-VHS SW to OFF position.
2. Connect the oscilloscope to P9001-1 and 3.
3. Adjust VR9001 until the signal level of P9001-1 is 100+-2.5% compared with signal level of P9001-3.

2-5-24. AGC LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
PP3023-1	VR3901	STOP	PAL COLOUR BAR
TAPE	M. EQ.	SPEC	
BLANK TAPE	OSCILLO-SCOPE	1.0+-0.03(Vp-p)	

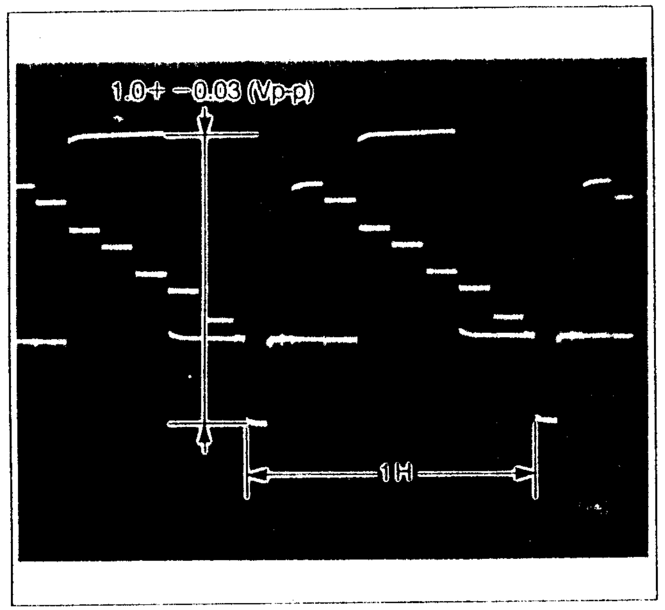


Fig. E27

AUDIO SECTION

2-5-25. BIAS CURRENT ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP4002(HOT/ TEST LAND) TP4003(GND/ TEST LAND)	VR4002	RECORDING	
TAPE	M. EQ.	SPEC	
BLANK TAPE	V.T.V.M.	3.0+-0.1(mVrms)	

Note:1. Connect a jumper wire between TP4004 and GND.
2. Set the S-VHS SW to OFF position.

2-5-26. HiFi E-E LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
AUDIO OUT (L)	VR4512	STOP	SINEWAVE 1KHz/-6dB (AUDIO IN (L))
TAPE	M.EQ.	SPEC	
	V.T.V.M./ SINEWAVE GENERATOR	-8+-0.5(dB)	

Note:1. Select the STEREO mode by Remote Controller. (Both Left and Right indicators on the FIP are lit.)

2. Set the HIFI REC VR to FIX position.

2-5-27. CARRIER FREQUENCY ADJUSTMENT

TP	ADJ.	MODE	INPUT
IC4501-34(L) IC4501-47(R)	VR4501 (NTSC-L) VR4509 (NTSC-R) VR4551 (PAL-L) VR4552 (PAL-R)	SP RECORDING	
TAPE	M.EQ.	SPEC	
BLANK TAPE	FREQUENCY CCUNTER	NTSC-L:1.3+-0.003(MHz) NTSC-R:1.7+-0.003(MHz) PAL-L:1.4+-0.003(MHz) PAL-R:1.8+-0.003(MHz)	

Note:1. When adjusting the NTSC mode, connect a jumper wire between PP3013-13 and GND.

2. When adjusting the PAL mode, disconnect a jumper wire.

2-5-28. DEVIATION ADJUSTMENT

TP	ADJ.	MODE	INPUT
BETWEEN VR4502 and R4511 (L) BETWEEN VR4507 and R4561 (R)	VR4502(L) VR4507(R)	SP RECORDING	SINEWAVE 1KHz/-6dB (AV1 IN)
TAPE	M.EQ.	SPEC	
BLANK TAPE	V.T.V.M./ SINEWAVE GENERATOR	110(mVrms)	

Note:1. Before recording the sinewave, adjust the HIFI REC VR until the audio output level of AV1 is 400mVrms.

2-5-29. FM B.P.F. ADJUSTMENT

TP	ADJ.	MODE	INPUT
IC4501-33(L) IC4501-48(R)	VR4550	PLAYBACK	SINEWAVE 1.608MHz/ 400mVp-p (PS4003-8)
TAPE	M.EQ.	SPEC	
NTSC RECORDED TAPE	OSCILLO-SCOPE/ SINEWAVE GENERATOR	Lch(IC4501-33) = Rch(IC4501-48)	

Note:1. Disconnect P501(from MAIN C.B.A. to HEAD AMP PACK C.B.A.).

2. Connect a jumper wire between PP4003-16 and GND.

3. The GND lead of oscilloscope must be connected to GND on HIFI AUDIO PACK C.B.A. to reduce the noise.

4. Supply the sinewave signal(1.608MHz/400mVp-p) to PS4003-8.

5. After this adjustment, connect P501 and disconnect the jumper wire.

TIMER SECTION

2-5-30. TIMER REFERENCE CLOCK ADJUSTMENT

TP	ADJ.	MODE	INPUT
TL7501	C7501	STOP	
TAPE	M.EQ.	SPEC	
	UNIVERSAL COUNTER	7812.5+-0.015(usec)	

2-5-31. LEVEL METER SENSITIVITY ADJUSTMENT

TP	ADJ.	MODE	INPUT
LEVEL METER ON THE FIP	VR4004	STOP	SINEWAVE 1KHz/-6dB (AUDIO IN (L), (R))
TAPE	M.EQ.	SPEC	
		0dB INDICATOR ON THE AUDIO LEVEL METER JUST LIGHTS UP	

Note:1. Select the STEREO mode. (Both Left and Right indicators on the FIP are lit.)

2. Before recording the sinewave, adjust the HIFI REC VR until the signal level at Audio Output Terminal is 400mVrms.

2-5-32. CHARACTER GENERATOR VCO ADJUSTMENT

TP	ADJ.	MODE	INPUT
IC3501-26 (TL3)	C3502	STOP	PAL COLOUR BAR
TAPE	M.EQ.	SPEC	
	V.T.V.M.	2.5+-0.25V	

SECTION 3
BLOCK DIAGRAMS

3-1. ABBREVIATIONS

443NT [L]	4.43 NTSC Ⓛ
A. COMP	AUDIO COMPONENT SIGNAL
A. COMPO	AUDIO COMPONENT SIGNAL
A. D.P [L]	AUDIO DUBBING PAUSE Ⓛ
A. D/L [L]	AUDIO DUBBING PAUSE Ⓛ
A. DEF [S]	AUDIO DEFEAT
A. DEF [S] [L]	AUDIO DEFEAT
A. DUB P [L]	AUDIO DUBBING PAUSE Ⓛ
A. DUB [H]	AUDIO DUBBING Ⓗ
A. ERASE	AUDIO ERASE
A. H. SW	AUDIO HEAD SWITCHING PULSE
A. HEAD [R]	AUDIO HEAD (REC)
A. HEAD [W]	AUDIO HEAD (PLAY)
A. IN [L]	AUDIO INPUT (L)
A. IN [R]	AUDIO INPUT (R)
A. MUT [H]	AUDIO MUTE Ⓗ
A. MUTE [H]	AUDIO MUTE Ⓗ
A. OUT [L]	AUDIO OUTPUT (L)
A. OUT [R]	AUDIO OUTPUT (R)
A. RF OUT	AUDIO RF SIGNAL OUTPUT
A/VS/S. DATA	AV SW/SERIAL DATA
AC ONLINE	AC ONLINE
AC. O/EE. H	AC ONLINE/EE Ⓗ
AFC S C	AFC S CURVE
AFC [S]	AFC S CURVE
AFC. DEF	AFC DEFEAT
ARFC OUT	AUDIO RF SIGNAL OUTPUT
ART. V	ARTIFICIAL VERTICAL SYNC SIGNAL
ART. V. MM	ARTIFICIAL VERTICAL SYNC SIGNAL MONO MULTI
ART. V/H/N	ARTIFICIAL VERTICAL SYNC SIGNAL Ⓗ/NORMAL
AT. V/H/N	ARTIFICIAL VERTICAL SYNC SIGNAL
ATSW/TEST/NOR/SE	TEST/NORMAL/SERVICE
AUDIO IN [L]	AUDIO INPUT (L)
AUDIO IN [R]	AUDIO INPUT (R)
AUDIO OUT [L]	AUDIO OUTPUT (L)
AUDIO OUT [R]	AUDIO OUTPUT (R)
AUDIO SELECT [H]	AUDIO SELECT Ⓗ
AUDIO. L	AUDIO (L)
AUDIO. R	AUDIO (R)
AV CNT	AV CONTROL
AV CTL	AV CONTROL
AV CTL/S. CLK	AV CONTROL/SERIAL CLOCK
AV. C.M.	AV CONTROL MODE
AVCNT/METER. R	AV CONTROL/LEVEL METER (R)
AVSW/METER. L	AV SW/LEVEL METER (L)
B MODE. H	B MODE Ⓗ
B.G.P	BURST GATE PULSE
BACKUP 5V	BACK UP 5V
BAND. U.E.	BAND U
BANDVL. D	BAND VL
BI/MI [L]	BILINGUAL/MIX Ⓛ
BIL	BILINGUAL
BIL [L]	BILINGUAL Ⓛ

BIL. [H]	BILINGUAL Ⓗ
BIL/M1 [L]	BILINGUAL Ⓛ
BS CLOCK	BS CLOCK
BS DATA	BS DATA
BS LCH IN	BS L CHANNEL INPUT
BS MIX [H]	BS MIX Ⓗ
BS MON [H]	BS MONITOR Ⓗ
BS MONI [H]	BS MONITOR Ⓗ
BS RCH IN	BS R CHANNEL INPUT
BS VIDEO	BS VIDEO SIGNAL
BS VIDEO/BS1	BS VIDEO SIGNAL
BS [H]	BS Ⓗ
BS. LEVEL	BS LEVEL
BS. M [H]	BS MONITOR Ⓗ
BS/VTR [H]	BS/VTR Ⓗ
BUS CLK	BUS CLOCK
BUS LSN	BUS LISTEN
BUS TLK	BUS TALK
BUZZER	BUZZER
CAP EC	CAPSTAN TORQUE CONTROL
CAP M GND	CAPSTAN MOTOR GND
CAP. ET	CAPSTAN TORQUE CONTROL
CAP. FG1	CAPSTAN FG1 PULSE
CAP. FG2	CAPSTAN FG2 PULSE
CAS. SW	CASSETTE SW
CCN	PLAYBACK CONTROL SIGNAL (−)
CCP	PLAYBACK CONTROL SIGNAL (+)
CHM	CONTROL SIGNAL (+)
CHP	CONTROL SIGNAL (−)
CINEM [L]	CINEMA Ⓛ
CINEMA [L]	CINEMA Ⓛ
CINEMA/MIX	CINEMA/MIX
CKL	RATCH LOCK
CKS	SHIFT LOCK
CL	CLOCK
CLK	CLOCK
CLK (C.G)	CLOCK
CLOCK. IN	CLOCK INPUT
CLP	CLAMP
COL/B/W/NOR	COLOUR/BLACK & WHITE/NORMAL
COLOR [H]	COLOUR Ⓗ
CONV	CONVERTOR
CS	CHIP SELECT
CTL GND	CONTROL GND
CTL HEAD [+]	CONTROL HEAD (+)
CTL HEAD [−]	CONTROL HEAD (−)
CTL [+]	CONTROL HEAD (+)
CTL [−]	CONTROL HEAD (−)
CUE BIAS	CUE BIAS
CURRENT LIM	CURRENT LIMMITER
CYL ET	CYLINDER TORQUE CONTROL
CYL GND	CYLINDER GND
D.F.M. REC [H]	DELAIED FM RECORDING Ⓗ
D. FM REC [L]	DELAIED FM RECORDING Ⓛ
D. GND	DIGITAL GND

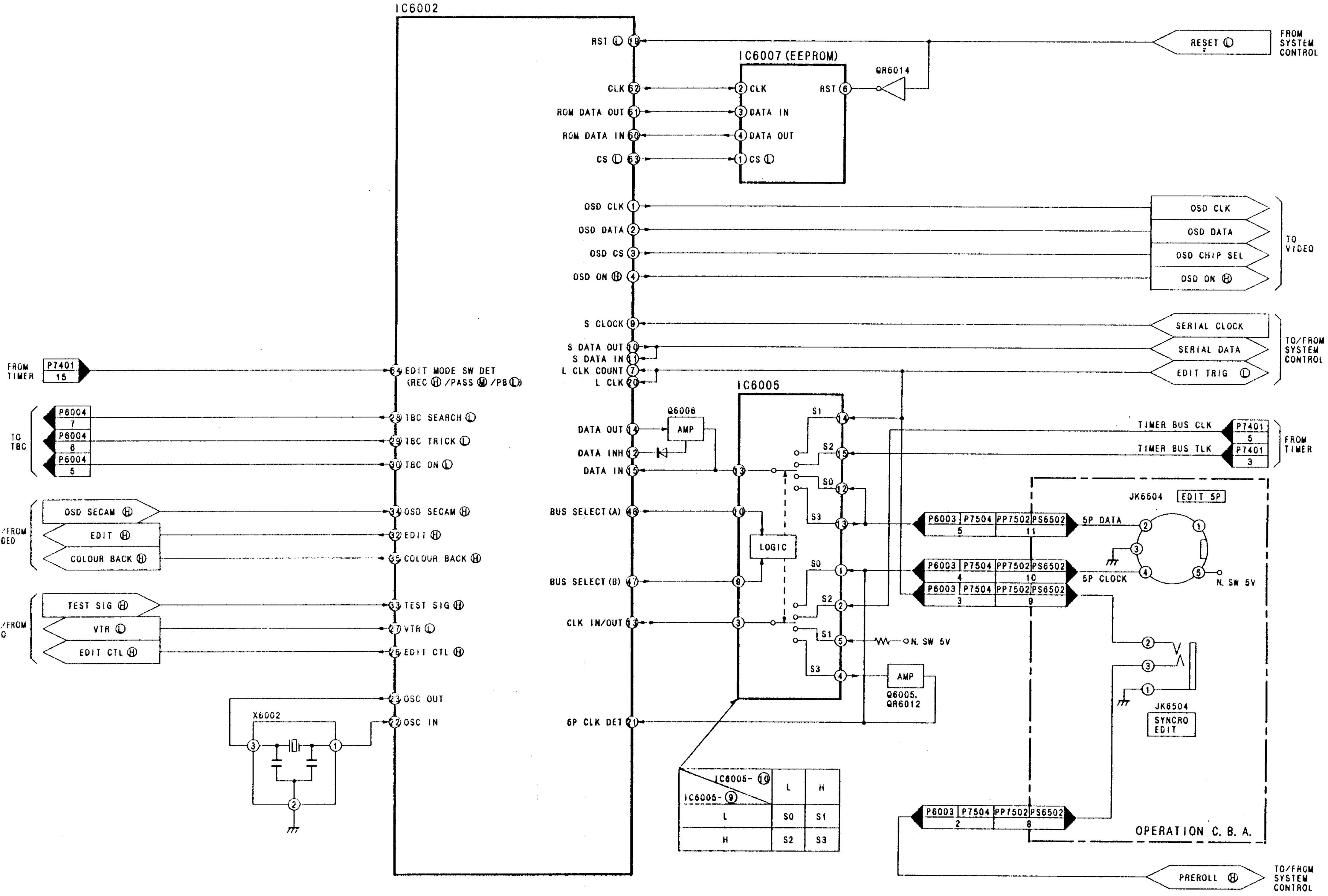
D. REC [H]	DELAYED RECORDING Ⓗ
D4/S. LED	D4/STILL LED
D4/STILLED	D4/STILL LED
DAC [CLK]	TUNER DAC (CLOCK)
DAC/FSCS	TUNER DAC/FS CHIP SELECT
DAREC [H]	DELAYED AUDIO RECORDING Ⓗ
DATA	DATA
DECODER [L]	DECODER (L)
DECODER [R]	DECODER (R)
DEW	DEW
DEW SNS	DEW SENSOR
DFMRE [H]	DELAYED FM AUDIO RECORDING Ⓗ
E. REC 5V	EXCEPT RECORDING 5V
EC	ERROR TORQUE CONTROL
ECR	ERROR TORQUE CONTROL REFERENCE VOLTAGE
EDT TRIG [L]	EDIT TRIGGER Ⓛ
EDIT [H]	EDIT Ⓗ
EE [H]	EE Ⓗ
EE [H]/INS [M]	EE Ⓗ/INSERT Ⓜ
EE. VV. TR	EE/VV/TRICK PLAY
EJECT. PO	EJECT POSITION
EJECT/VDET	EJECT/REVERSE SLOW LOCK
ENV. SEL	ENVELOPE SELECT
ENVE. OUT	ENVELOPE OUTPUT
ENVE. SEL	ENVELOPE SELECT
ENV SELECT	ENVELOPE SELECT
EP [H]	LP Ⓗ
EP/LP [H]	LP Ⓗ
EP/LP/SP	LP/SP
EP/SS [H]	LP/SLOW/STILL/STOP Ⓗ
EPROMCS	EPROM CHIP SELECT
EX. REC 5V	EXCEPT RECORDING 5V
FF/REW [L]	FIRST FORWARD/REWIND Ⓛ
FG1 IN	FG1 PULSE INPUT
FG2 IN	FG2 PULSE INPUT
FILTER ADJUSTMEN	FILTER ADJUSTMENT
FLY ERASE [H]	FLYING ERASE HEAD ON Ⓗ
FLY ON [H]	FLYING ERASE E HEAD ON Ⓗ
FLY. E [H]	FLYING ERASE HEAD ON Ⓗ
FM MUT [H]	FM AUDIO MUTE Ⓗ
FM MUTE [H]	FM AUDIO MUTE Ⓗ
FM OUT [L]	FM OUTPUT (L)
FM OUT [R]	FM OUTPUT (R)
FM PACK OUT [L]	FM PACK OUTPUT (L)
FM PACK OUT [R]	FM PACK OUTPUT (R)
FM/BS SEL [L]	FM/BS SELECT (L)
FM/BS SEL [R]	FM/BS SELECT (R)
FS. CLK	FS CLOCK
FUL. E [H]	FULL ERASE HEAD ON Ⓗ
FULL. E [H]	FULL ERASE HEAD ON Ⓗ
FULL. E. 12V	FULL ERASE 12V
GND [A]	GND (ANALOGUE)
GND [TU]	GND (TUNER)
GND/N. SW. 12V	GND/NON SW 12V

H. SYNC	HORIZONTAL SYNC
H. AMP. SW	HEAD AMP SW PULSE
H. P <R>	HEAD PHONE (R)
H. P <L>	HEAD PHONE (L)
H. P GND	HEAD PHONE GND
H. P OUT [L]	HEAD PHONE OUTPUT (L)
H. P OUT [R]	HEAD PHONE OUTPUT (R)
H. SW	HEAD SW PULSE
HEAD PHONE [L]	HEAD PHONE (L)
HEAD PHONE [R]	HEAD PHONE (R)
HEAD SW	HEAD SW
HEATER [+]	HEATER (+)
HEATER [−]	HEATER (−)
HSS	HORIZONTAL SYNC SIGNAL
HTR [+]	HEATER (+)
HTR [−]	HEATER (−)
I RFE	REFERENCE CURRENT
ICL	CONTROL AGC CIRCUIT
IF	INTERMEDIATE FREQUENCY
IN SELA1	INPUT SELECT A1 POSITION
IN SELA2	INPUT SELECT A2 POSITION
IN SELA3	INPUT SELECT A3 POSITION
INS L/R [L]	INSERT Lch/Rch Ⓛ
INS. [H]	INSERT Ⓗ
INSEL A1	INPUT SELECT A1 POSITION
INSEL A2	INPUT SELECT A2 POSITION
INSERT	INSERT
INSERT [H]	INSERT Ⓗ
IO CS	INPUT/OUTPUT CHIP SELECT
JOG1	JOG1
JOG S3 LED/FOWRD	JOG LED/FORWARD LED
JOG/F. LED	JOG LED/FORWARD LED
JSB [H]	JSB Ⓗ
JST. CLCK	JUST CLOCK
JST. CLK	JUST CLOCK
JST. CLOCK	JUST CLOCK
L. OUT	Lch OUTPUT
L. CH [H]	Lch Ⓗ
L. CH [L]	Lch Ⓛ
LED (MAIN)	LED (MAIN)
LED (STEREO)	LED (STEREO)
LED (SUB)	LED (SUB)
LED CKL	LED SERIAL CLOCK
LED CKS	LED SERIAL CLOCK
LED DATA	LED SERIAL DATA
LINE IN 1 [L]	LINE INPUT 1 (L)
LINE IN 1 [R]	LINE INPUT 1 (R)
LINE IN 2 [L]	LINE INPUT 2 (L)
LINE IN 2 [R]	LINE INPUT 2 (R)
LINE IN V	LINE INPUT VIDEO
LINE IN [L]	LINE INPUT (L)
LINE IN [R]	LINE INPUT (R)
LINE OUT [L]	LINE OUTPUT (L)
LINE OUT [R]	LINE OUTPUT (R)
LP [H]	LP Ⓗ

LPTRI [L]	LP TRICK PLAY Ⓛ	P. OFF [L]	POWER OFF Ⓛ
Lch/A. DUB	Lch/AUDIO DUBBING	PAL [H]	PAL Ⓗ
M GND	MOTOR GND	PAL [L]/NTSC [H]	PAL Ⓛ/NTSC Ⓗ
M REG	MOTOR REGULATOR	PB ADJ OUT	PLAYBACK ADJUST OUTPUT
MAIN OUT	MAIN OUTPUT	PB OUT	PLAYBACK OUTPUT
MAIN [L]	MAIN Ⓛ	PB. H	PLAYBACK Ⓗ
MAIN/MONO	MAIN/MONAURAL	PFG	PG/FG
MAX IN	MAXIMAM INPUT	PHOTSN +B	PHOTO SENSOR +B
MES [H]	MESECAM Ⓗ	PICT. CNT	PICTURE CONTROL
MESE [H]	MESECAM Ⓗ	PLAY LED/RVS LED	PLAY LED/REVERSE LED
MESE [L]	MESECAM Ⓛ	PLAY. PO	PLAY POSITION
METER 5V	LEVEL METER 5V	PLAY/R. LED	PLAY LED/REVERSE LED
METER [L]	LEVEL METER (L)	PLY/DEW	PLAY/DEW Ⓗ
METER [R]	LEVEL METER (R)	POWER OFF [L]	POWER OFF Ⓛ
METER. L/AVS	LEVEL METER (L)	PREROLL [H]	PREROLL Ⓗ
METER. R/AVC	LEVEL METER (R)	PWRFAIL	POWER FAILURE DETECT
MI/BI [L]	MIX Ⓗ/BILIGUAL	R. CH [H]	Rch Ⓗ
MIC GND	MIC GND	R. CH [L]	Rch Ⓛ
MIC IN	MIC INPUT	R. ST	RESET
MIC IN [L]	MIC INPUT (L)	R/S/F	REVERSE Ⓗ/STOP Ⓜ/FORWARD Ⓛ
MIC IN [R]	MIC INPUT (R)	RCH [H]	Rch Ⓗ
MIC [H]	MIC Ⓗ	REC 12V	RECORDING 12V
MIX [H]	MIX Ⓗ	REC CHROMA	RECORDING CHROMINANCE SIGNAL
MIX [H]/CINEMA [L]	MIX Ⓗ/CINEMA SOUND Ⓛ	REC H	RECORDING Ⓗ
MIX/CINE	MIX Ⓗ/CINEMA SOUND Ⓛ	REC IN	RECORDING INPUT
MIX/CINEMA [L]	MIX Ⓗ/CINEMA SOUND Ⓛ	REC OUT [L]	RECORDING OUTPUT Ⓛ
MN. H/M. L	MONAURAL Ⓗ/MAIN Ⓛ	REC START	RECORDING START
MN. H/MAIN L	MONAURAL Ⓗ/MAIN Ⓛ	REC VR [C]	RECORDING VOLUME (COMMON)
MN2/MES. L	MONAURAL 2/MESECAM Ⓛ	REC VR [L]	RECORDING VOLUME (L)
MODE SEL	AUDIO MODE SELECT	REC VR [R]	RECORDING VOLUME (R)
MODE SW	AUDIO MODE SW	REC Y	RECORDING LUMINANCE SIGNAL
MODE. S. IN	AUDIO MODE SELECT INPUT	REC [H]	RECORDING Ⓗ
MODE. S. OUT	AUDIO MODE SELECT OUTPUT	REC. C	RECORDING CHROMINANCE SIGNAL
MONO [H]	MONAURAL Ⓗ	REC. Y	RECORDING LUMINANCE SIGNAL
MONO [H]/MAIN [L]	MONAURAL Ⓗ/MAIN Ⓛ	REC/EE CTL	RECORDING/EE CONTROL
MONO2 [L]	MONAURAL 2	REEL-T	REEL PULSE (TAKE-UP)
MONO2/MESE [FM(L)]	MONAURAL 2/MESECAM (FM Ⓛ)	REEL-S	REEL PULSE (SUPPLY)
MOTOR GND	MOTOR GND	REGULATOR FILTER	REGULATOR FILTER
MUTE	MUTE	RESET	RESET
N. A. REC [L]	NORMAL AUDIO RECORDING	REV M F/R	REVIEW MOTOR
N. SW 12V	NON SW 12V		FORWARD/REVERSE
N. SW. 5. DET	NON SW 5V DETECT	REV M V1	REVIEW MOTOR V1
NICAM	NICAM	REV M V2	REVIEW MOTOR V2
NICAM [L]	NICAM Ⓛ	REV MOTOR F/R	REVIEW MOTOR
NOL [H]	PAL Ⓗ/4.43 NTSC Ⓜ/3.58 NTSC Ⓛ		FORWARD/REVERSE
NOR/SOFT [H]	NORMAL/SOFT TAPE PLAY Ⓗ	REV MOTOR V1	REVIEW MOROR V1
NORMAL [H]	NORMAL Ⓗ	REV MOTOR V2	REVIEW MOTOR V2
NR BIAS	NR BIAS	REV MOTOR [+]	REVIEW MOTOR (+)
NTSC [L]	NTSC Ⓛ	REV MOTOR [−]	REVIEW MOTOR (−)
OCH	CONTROL AGC CIRCUIT	REV. M. GND	REVIEW MOTOR GND
OUT	OUTPUT	RF. CHROMA	RF CHROMINANCE SIGNAL
P-OFF [H]	POWER OFF Ⓗ	RF OUT	RF OUTPUT
P-OFF [L]	POWER OFF Ⓛ	RF Y	RF LUMINANCE SIGNAL
P. FAIL	POWER FAILURE DETECT	RF. Y. IN	RF LUMINANCE SIGNAL INPUT
P. OFF [H]	POWER OFF Ⓗ	RF. Y. OUT	RF LUMINANCE SIGNAL OUTPUT

ROTAR. SW	ROTARY SW
ROTARY	ROTARY SW
RST	RESET
RST [L]	RESET Ⓛ
Rch/INST	Rch/INSERT
S IN	SERIAL DATA INPUT
S OUT	SERIAL DATA OUTPUT
S-PHOTO	SUPPLY PHOTO TRANSISTOR
S-RL. PLS	SUPPLY REEL PULSE
S. CLK	SERIAL CLOCK
S. CLK/AV	SERIAL CLOCK/AV
S. DATA	SERIAL DATA
S. DATA/A	SERIAL DATA
S. PHOTO	SUPPLY PHOTO TRANSISTOR
S. TAB [L]	SAFETY TAB SW ON Ⓛ
S/P/N	SECAM/PAL/NTSC
SC IN	SERIAL CLOCK INPUT
SC OUT	SERIAL CLOCK OUTPUT
SCK SELECT	SERIAL CLOCK SELECT
SEL OUT [L]	SELECT OUTPUT (L)
SEL OUT [R]	SELECT OUTPUT (R)
SHUTTLE 1	SHUTTLE 1
SIF	SOUND INTERMEDIATE FREQUENCY
SLMUT [H]	INPUT SELECT MUTE Ⓗ
SLNID [+]	SOLENOID (+)
SLNID [−]	SOLENOID (−)
SLW TR. MM	SLOW TRACKING MONO MULTI
SLW TR. REF	SLOW TRACKING REFERENCE VOLTAGE
SNS. GND	SENSOR GND
SOFT [H]	SOFT TAPE PLAY Ⓗ
SOFT [H]/NORMAL	SOFT TAPE PLAY Ⓗ/NORMAL Ⓗ
SOLENOID ON [L]	SOLENOID ON Ⓛ
SP [H]	SP Ⓗ
SP/L/SLP	SP/LP
SSS [L]	SLOW/STILL/STOP
STEREO LED	STEREO LED
STEREO [H]	STEREO Ⓗ
STEREO [L]	STEREO Ⓛ
STOP. PO	STOP POSITION
STOP/5V	STOP POSITION/5V
STOP1/TAPE SEL	STOP1 POSITION/TAPE SELECT
STOP1/PAL:ST	STOP1 POSITION/PAL
STOP2. PO	STOP 2 POSITION
STOP2/S-TAB	STOP 2 POSITION/SAFETY TAB SW
STREO [H]	STEREO Ⓗ
SUB BIAS	SUB BIAS
SUB. SW	SUB SW
SVHS CAS [L]	S-VHS CASSETTE Ⓛ
SW. 5. DET	SW 5V DETECT
SYNC [L]	SYNC Ⓛ
SYSCON 5V	SYSTEM CONTROL 5V
SYSTEM	SYSTEM SW
T-PHOTO	TAKE-UP PHOTO TRANSISTOR
T-RL. PLS	TAKE-UP REEL PULSE
T. BUSCLK	TIMER BUS CLOCK
T. BUSLSN	TIMER BUS LISTEN
T. BUSTLK	TIMER BUS TALK
T. END [L]	TAPE END Ⓛ
T. PHOTO	TAKE-UP PHOTO TRANSISTOR
TAPE END [L]	TAPE END Ⓛ
TAPE END [L]/CAM	TAPE END Ⓛ/CAMERA PAUSE
TEST	TEST MODE
TPZ	TRAPEZOIDAL WAVE CIRCUIT
TRIC [L]	TRIC PLAY Ⓛ
TRICK [L]	TRIC PLAY Ⓛ
TRK. ENV	AUTO TRACKING ENVELOPE DETECT
TU. AUDIO	TUNER AUDIO
TU. GND	TUNER GND
TU. V. IN	TUNER VIDEO SIGNAL INPUT
TU. VIDEO	TUNER VIDEO
TUN NOR IN	TUNER NORMAL INPUT
TUN R	TUNER AUDIO (R)
TUN. AUDIO IN	TUNER AUDIO INPUT
TUNER 12V	TUNER 12V
TUNER L	TUNER AUDIO (L)
TUNER V IN	TUNER VIDEO SIGNAL INPUT
TUNER [L]	TUNER AUDIO (L)
TUNER [N]	TUNER AUDIO (NORMAL)
TUNER [R]	TUNER AUDIO (R)
TUNER. 12	TUNER 12V
TUOFF [H]	TUNER OFF Ⓗ
TV. AUDIO	TV AUDIO
TV/VTR	TV/VTR
TXTON [L]	TEXT ON Ⓛ
U. REG45V	UNREGULATOR 45V
UNREG	UNREGULATOR
UNREG19V	UNREGULATOR 19V
V. REF	REFERENCE VOLTAGE
V. EE [H]	VIDEO EE Ⓗ
V. EE [L]	VIDEO EE Ⓛ
VCO REF	RERERENCE OSCILLATER
VD. IN	VIDEO SIGNAL INPUT
VD. OUT	VIDEO SIGNAL OUTPUT
VIDEO EE [L]	VIDEO EE Ⓛ
VIDEO IN	VIDEO SIGNAL INPUT
VIDEO OUT	VIDEO SIGNAL OUTPUT
VM	MOTOR VOLTAGE
VM DOWN [L]	MOTOR VOLTAGE DOWN Ⓛ
VSS	VERTICAL SYNC SIGNAL
VTR [H]	VTR Ⓗ
VTR. 12V	VTR 12V
X IN	OSCILLATOR INPUT
X OUT	OSCILLATOR OUTPUT

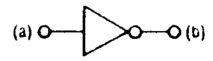
3-2. EDIT BLOCK DIAGRAM


IC6002
RST Ⓛ ⑲
CLK ㊷
ROM DATA OUT ㊶
ROM DATA IN ㊵
CS Ⓛ (63)
IC6007 (EEPROM)
② CLK
③ DATA IN
④ DATA OUT
① CS Ⓛ
RST ⑥
QR6014
RESET Ⓛ
FROM SYSTEM CONTROL
OSD CLK ①
OSD DATA ②
OSD CS ③
OSD ON Ⓗ ④
OSD CLK
OSD DATA
OSD CHIP SEL
OSD ON Ⓗ
TO VIDEO
S CLOCK ⑨
S DATA OUT ⑩
S DATA IN ⑪
L CLK COUNT ⑦
L CLK ⑳
SERIAL CLOCK
SERIAL DATA
EDIT TRIG Ⓛ
TO/FROM SYSTEM CONTROL
FROM TIMER
P7401 15
(64) EDIT MODE SW DET (REC Ⓗ /PASS Ⓜ /PB Ⓛ)
TO TBC
P6004 7
P6004 6
P6004 5
㉘ TBC SEARCH Ⓛ
㉙ TBC TRICK Ⓛ
㉚ TBC ON Ⓛ
TO/FROM VIDEO
OSD SECAM Ⓗ
EDIT Ⓗ
COLOUR BACK Ⓗ
㉞ OSD SECAM Ⓗ
㉜ EDIT Ⓗ
㉟ COLOUR BACK Ⓗ
TO/FROM I/O
TEST SIG Ⓗ
VTR Ⓛ
EDIT CTL Ⓗ
㉝ TEST SIG Ⓗ
㉗ VTR Ⓛ
㉖ EDIT CTL Ⓗ
㉓ OSC OUT
㉒ OSC IN
X6002
③ ② ①
Q6006
AMP
DATA OUT ⑭
DATA INH ⑫
DATA IN ⑮
BUS SELECT (A) ㊽
BUS SELECT (B) ㊼
CLK IN/OUT ⑬
5P CLK DET ㉑
IC6005
⑬ ⑩ ⑨ ③
LOGIC
S1 ⑭
S2 ⑮
S0 ⑫
S3 ⑬
S0 ①
S2 ②
S1 ⑤
S3 ④
N. SW 5V
AMP
Q6005, QR6012
TIMER BUS CLK
TIMER BUS TLK
P7401 5
P7401 3
FROM TIMER
JK6504 EDIT 5P
P6003 P7504 PP7502 PS6502 5 11
5P DATA
P6003 P7504 PP7502 PS6502 4 10
5P CLOCK
P6003 P7504 PP7502 PS6502 3 9
② ① ③ ④ ⑤
N. SW 5V
② ③ ①
JK6504
SYNCRO EDIT
P6003 P7504 PP7502 PS6502 2 8
OPERATION C. B. A.
PREROLL Ⓗ
TO/FROM SYSTEM CONTROL

IC6005-⑩ / IC6005-⑨	L	H
L	S0	S1
H	S2	S3

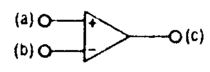
SYMBOL	TRUTH VALUE TABLE

INVERTER



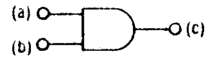
IN	(a)	H	L
OUT	(b)	L	H

COMPARTOR



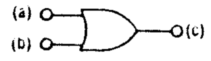
IN	(a) (b)	(a) > (b)	(a) < (b)
OUT	(c)	H	L

AND CIRCUIT



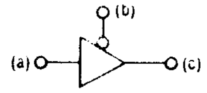
IN	(a)	L	L	H	H
	(b)	L	H	L	H
OUT	(c)	L	L	L	H

OR CIRCUIT



IN	(a)	L	L	H	H
	(b)	L	H	L	H
OUT	(c)	L	H	H	H

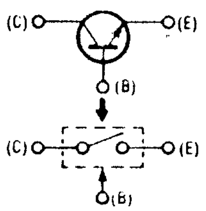
THREE STATES BUFFER



IN	(a)	H	L	H or L
	(b)	L	L	H
OUT	(c)	H	L	※

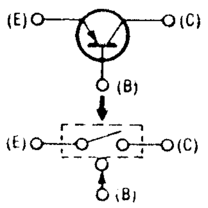
※ High Impedance

TR. SW (NPN TYPE)



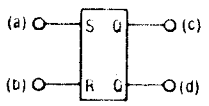
BASE	H	L
TR. SW	ON	OFF

TR. SW (PNP TYPE)



BASE	H	L
TR. SW	OFF	ON

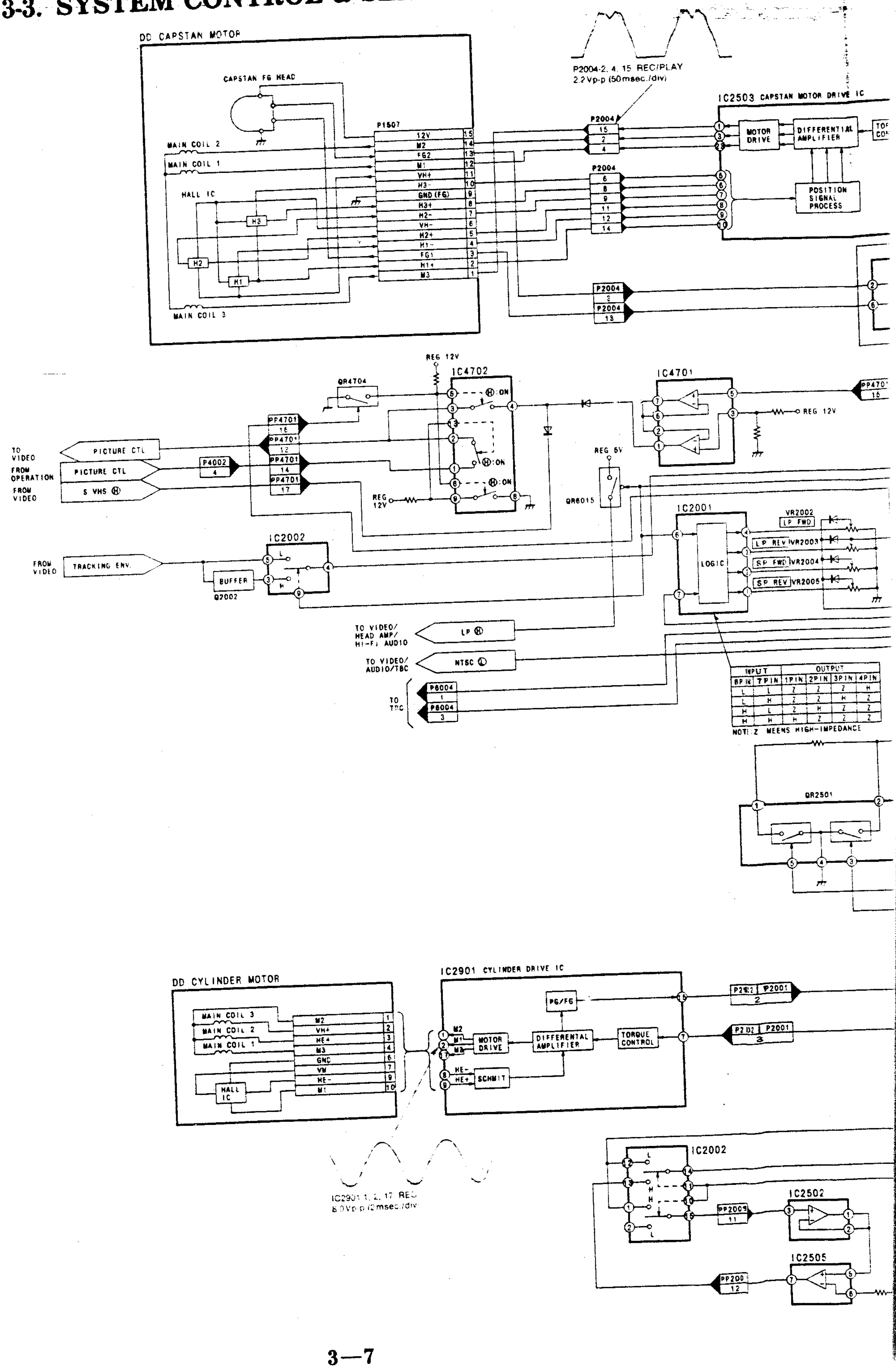
R-S TYPE FLIP-FLOP



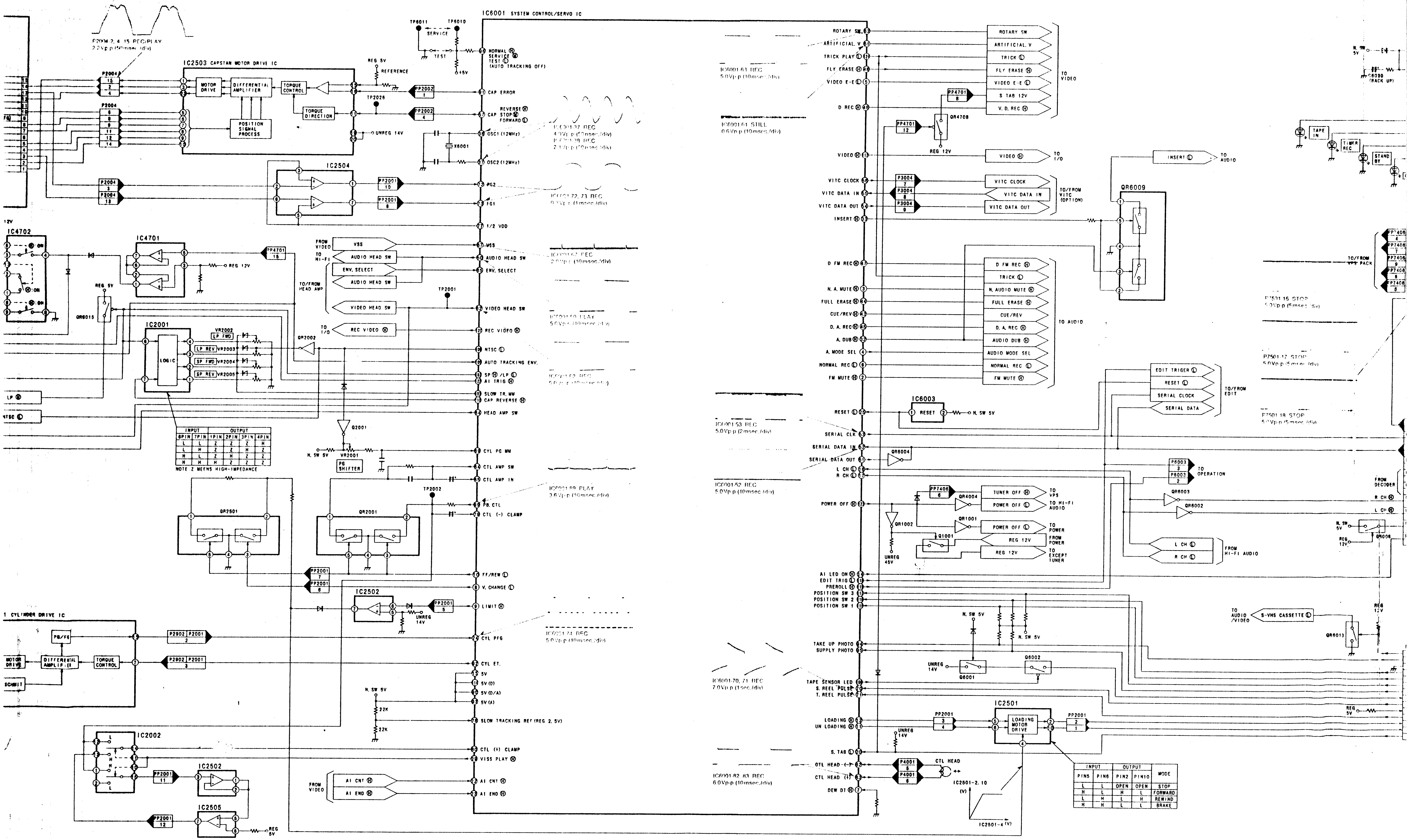
IN	(a)	L	L	⎍
	(b)	L	⎍	L
OUT	(c)	※	L	H
	(d)	◆	H	L

※ Initial condition is maintained
◆ Initial condition is reversed

3-3. SYSTEM CONTROL & SERVO BLOCK DIAGRAM


P2004-2, 4, 15 REC/PLAY
2.2Vp-p (50msec./div)
DD CAPSTAN MOTOR
CAPSTAN FG HEAD
MAIN COIL 2
MAIN COIL 1
HALL IC
H3
H2
H1
MAIN COIL 3
P1507
12V
M2
FG2
M1
VH+
H3-
GND (FG)
H3+
H2-
VH-
H2+
H1-
FG1
H1+
M3
P2004
IC2503 CAPSTAN MOTOR DRIVE IC
MOTOR DRIVE
DIFFERENTIAL AMPLIFIER
POSITION SIGNAL PROCESS
REG 12V
IC4702
QR4704
H:ON
PP4701
P4002
TO VIDEO
PICTURE CTL
FROM OPERATION
PICTURE CTL
FROM VIDEO
S VHS H
REG 12V
REG 5V
QR6015
IC4701
IC2001
LOGIC
VR2002
LP FWD
LP REV
VR2003
SP FWD
VR2004
SP REV
VR2005
IC2002
FROM VIDEO
TRACKING ENV.
BUFFER
Q2002
TO VIDEO/ HEAD AMP/ HI-FI AUDIO
LP H
TO VIDEO/ AUDIO/TBC
NTSC L
TO TBC
P6004
INPUT
OUTPUT
8PIN | 7PIN | 1PIN | 2PIN | 3PIN | 4PIN
L | L | Z | Z | Z | H
L | H | Z | Z | H | Z
H | L | Z | H | Z | Z
H | H | H | Z | Z | Z
NOTE:Z MEENS HIGH-IMPEDANCE
QR2501
DD CYLINDER MOTOR
MAIN COIL 3
MAIN COIL 2
MAIN COIL 1
HALL IC
M2
VH+
HE+
M3
GND
VM
HE-
M1
IC2901 CYLINDER DRIVE IC
PG/FG
MOTOR DRIVE
DIFFERENTIAL AMPLIFIER
TORQUE CONTROL
SCHMIT
P2002
P2001
IC2901-1, 2, 17 REC
8.0Vp-p (2msec./div)
IC2002
IC2502
IC2505
PP2003
PP2001

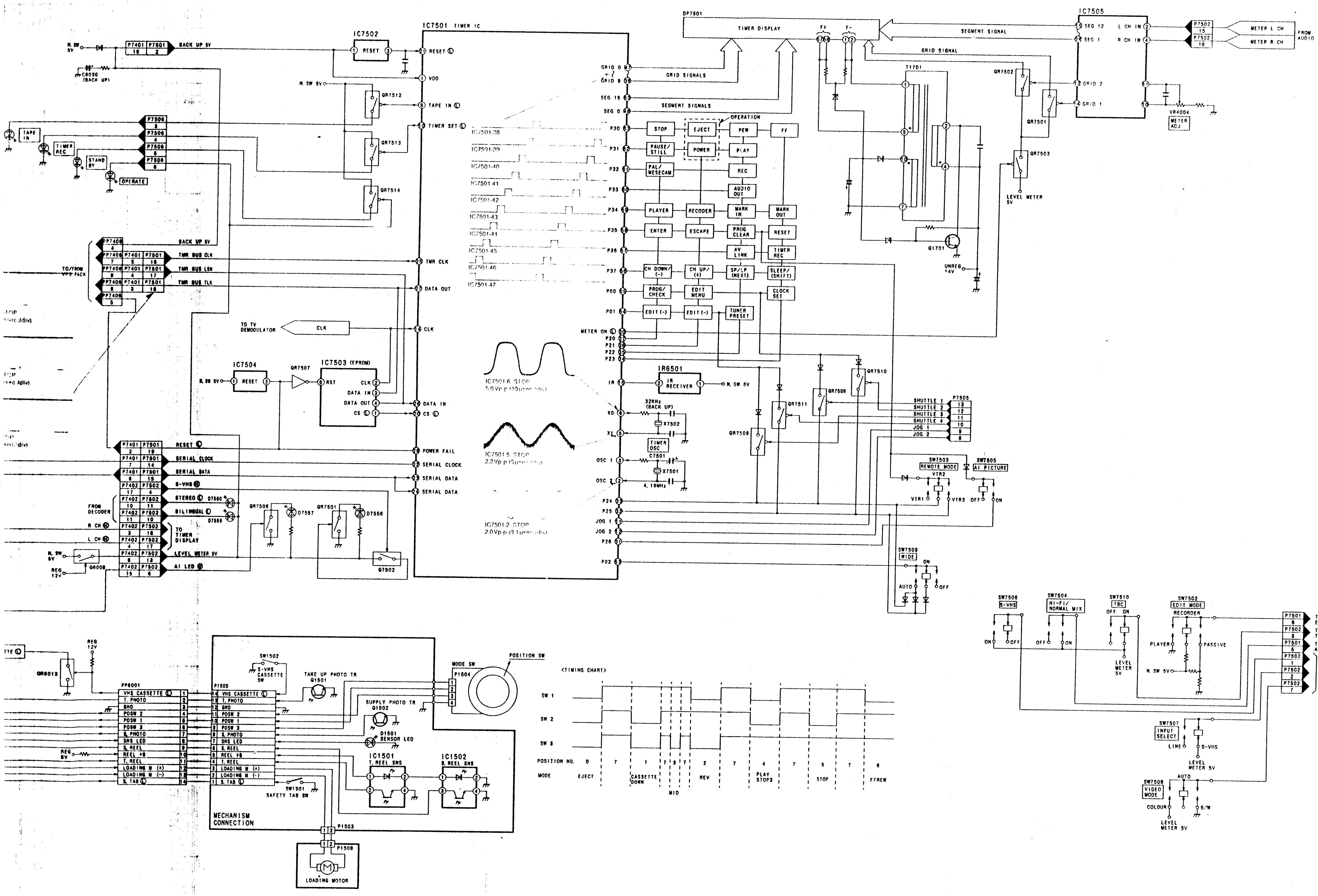
/O BLOCK DIAGRAM


IC6001 SYSTEM CONTROL/SERVO IC
IC2503 CAPSTAN MOTOR DRIVE IC
MOTOR DRIVE
DIFFERENTIAL AMPLIFIER
TORQUE CONTROL
TORQUE DIRECTION
POSITION SIGNAL PROCESS
P2004
PP2002
P2004 2, 4, 15 REC/PLAY
2.2Vp-p (50msec./div)
TP6011
TP6010
SERVICE
TEST
NORMAL Ⓗ
SERVICE Ⓜ
TEST Ⓛ
(AUTO TRACKING OFF)
REG 5V
REFERENCE
TP2026
CAP ERROR
REVERSE Ⓗ
CAP STOP Ⓜ
FORWARD Ⓛ
UNREG 14V
X6001
OSC1 (12MHz)
OSC2 (12MHz)
IC6001-37 REC
4.0Vp-p (50msec./div)
IC6001-38 REC
2.1Vp-p (50msec./div)
IC2504
PP2001
FG2
FG1
1/2 VDD
IC6001-72, 73 REC
0.2Vp-p (1msec./div)
IC4702
IC4701
PP4701
REG 12V
REG 5V
QR6015
FROM VIDEO
VSS
TO HI-FI
AUDIO HEAD SW
ENV. SELECT
TO/FROM HEAD AMP
VIDEO HEAD SW
TO I/O
REC VIDEO Ⓗ
TP2001
IC6001-67 REC
2.0Vp-p (10msec./div)
IC6001-60 PLAY
5.0Vp-p (10msec./div)
IC6001-52 REC
5.0Vp-p (10msec./div)
IC2001
LOGIC
VR2002
LP FWD
LP REV
VR2003
SP FWD
VR2004
SP REV
VR2005
QR2002
NTSC Ⓛ
AUTO TRACKING ENV.
SP Ⓗ /LP Ⓛ
AI TRIG Ⓗ
SLOW TR. MM
CAP REVERSE Ⓗ
HEAD AMP SW
LP Ⓗ
NTSC Ⓛ
Q2001
N. SW 5V
VR2001
PG SHIFTER
CYL PG MM
CTL AMP SW
CTL AMP IN
TP2002
PB. CTL
CTL (-) CLAMP
IC6001-59 PLAY
3.6Vp-p (10msec./div)
QR2501
QR2001
FF/REW Ⓛ
V. CHANGE Ⓛ
IC2502
UNREG 14V
LIMIT Ⓗ
CYLINDER DRIVE IC
PB/FG
MOTOR DRIVE
DIFFERENTIAL AMPLIFIER
TORQUE CONTROL
SCHMIT
P2902
CYL PFG
IC6001-74 REC
5.0Vp-p (10msec./div)
CYL ET.
5V
5V (D)
5V (D/A)
5V (A)
N. SW 5V
22K
22K
SLOW TRACKING REF (REG 2.5V)
IC2002
IC2502
IC2505
CTL (+) CLAMP
VISS PLAY Ⓗ
AI CNT Ⓗ
AI END Ⓗ
FROM VIDEO
REG 5V
ROTARY SW
ARTIFICIAL. V
TRICK PLAY Ⓛ
FLY ERASE Ⓗ
VIDEO E-E Ⓛ
D REC Ⓗ
IC6001-63 REC
5.0Vp-p (10msec./div)
IC6001-61 STILL
0.6Vp-p (10msec./div)
ROTARY SW
ARTIFICIAL. V
TRICK Ⓛ
FLY ERASE Ⓗ
VIDEO E-E Ⓛ
S TAB 12V
V. D. REC Ⓗ
TO VIDEO
PP4701
QR4708
REG 12V
VIDEO Ⓗ
TO I/O
VITC CLOCK
VITC DATA IN
VITC DATA OUT
P3004
TO/FROM VITC (OPTION)
INSERT Ⓗ
INSERT Ⓛ
TO AUDIO
QR6009
D FM REC Ⓗ
TRICK Ⓛ
N. A. MUTE Ⓗ
N. AUDIO MUTE Ⓗ
FULL ERASE Ⓗ
CUE/REV Ⓗ
CUE/REV
D. A. REC Ⓗ
A. DUB Ⓗ
AUDIO DUB Ⓗ
A. MODE SEL
AUDIO MODE SEL
NORMAL REC Ⓛ
FM MUTE Ⓗ
TO AUDIO
EDIT TRIGER Ⓛ
RESET Ⓛ
SERIAL CLOCK
SERIAL DATA
TO/FROM EDIT
IC6003
RESET
N. SW 5V
IC6001-53 REC
5.0Vp-p (2msec./div)
SERIAL CLK
SERIAL DATA IN
SERIAL DATA OUT
QR6004
L CH Ⓛ
R CH Ⓛ
P6003
TO OPERATION
IC6001-52 REC
5.0Vp-p (10msec./div)
POWER OFF Ⓗ
PP7406
QR4004
TUNER OFF Ⓗ
POWER OFF Ⓛ
TO VPS
TO HI-FI AUDIO
QR1001
QR1002
Q1001
TO POWER
FROM POWER
TO EXCEPT TUNER
UNREG 45V
QR6003
QR6002
L CH Ⓛ
R CH Ⓛ
FROM HI-FI AUDIO
AI LED ON Ⓗ
EDIT TRIG Ⓛ
PREROLL Ⓗ
POSITION SW 3
POSITION SW 2
POSITION SW 1
N. SW 5V
TO AUDIO /VIDEO
S-VHS CASSETTE Ⓛ
TAKE UP PHOTO
SUPPLY PHOTO
UNREG 14V
Q6001
Q6002
IC6001-70, 71 REC
7.0Vp-p (1sec./div)
TAPE SENSOR LED
S. REEL PULSE
T. REEL PULSE
IC2501
LOADING
UN LOADING
LOADING MOTOR DRIVE
UNREG 14V
S. TAB Ⓛ
CTL HEAD (-)
CTL HEAD (+)
P4001
CTL HEAD
IC6001-82, 83 REC
6.0Vp-p (10msec./div)
DEW DT Ⓗ
IC2501-2, 10 (V)
IC2501-4 (V)
N. SW 5V
C6030 (RACK UP)
TAPE IN
TIMER REC
STAND BY
P7406
TO/FROM VPS PACK
P7501-16 STOP
5.0Vp-p (5msec./div)
P7501-17 STOP
5.0Vp-p (5msec./div)
P7501-18 STOP
5.0Vp-p (5msec./div)
FROM DECODER
R CH Ⓗ
L CH Ⓗ
N. SW 5V
REG 12V
Q6008
REG 12V
QR6013
REG

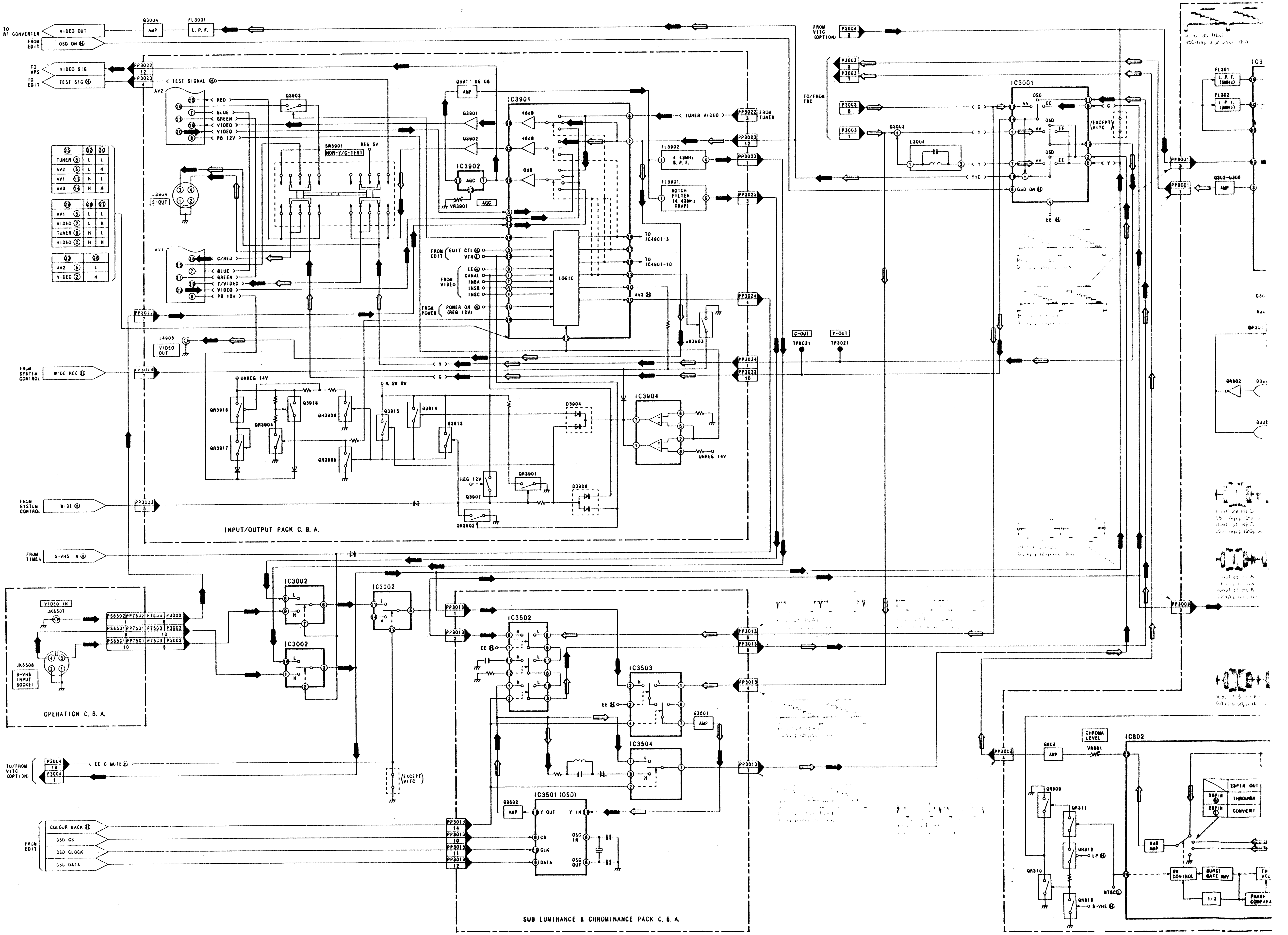
INPUT		OUTPUT			
6PIN	7PIN	1PIN	2PIN	3PIN	4PIN
L	L	Z	Z	Z	H
L	H	Z	Z	H	Z
H	L	Z	H	Z	Z
H	H	H	Z	Z	Z

NOTE: Z MEENS HIGH-IMPEDANCE

INPUT		OUTPUT		MODE
PIN5	PIN6	PIN2	PIN10	
L	L	OPEN	OPEN	STOP
H	L	H	L	FORWARD
L	H	L	H	REWIND
H	H	L	L	BRAKE

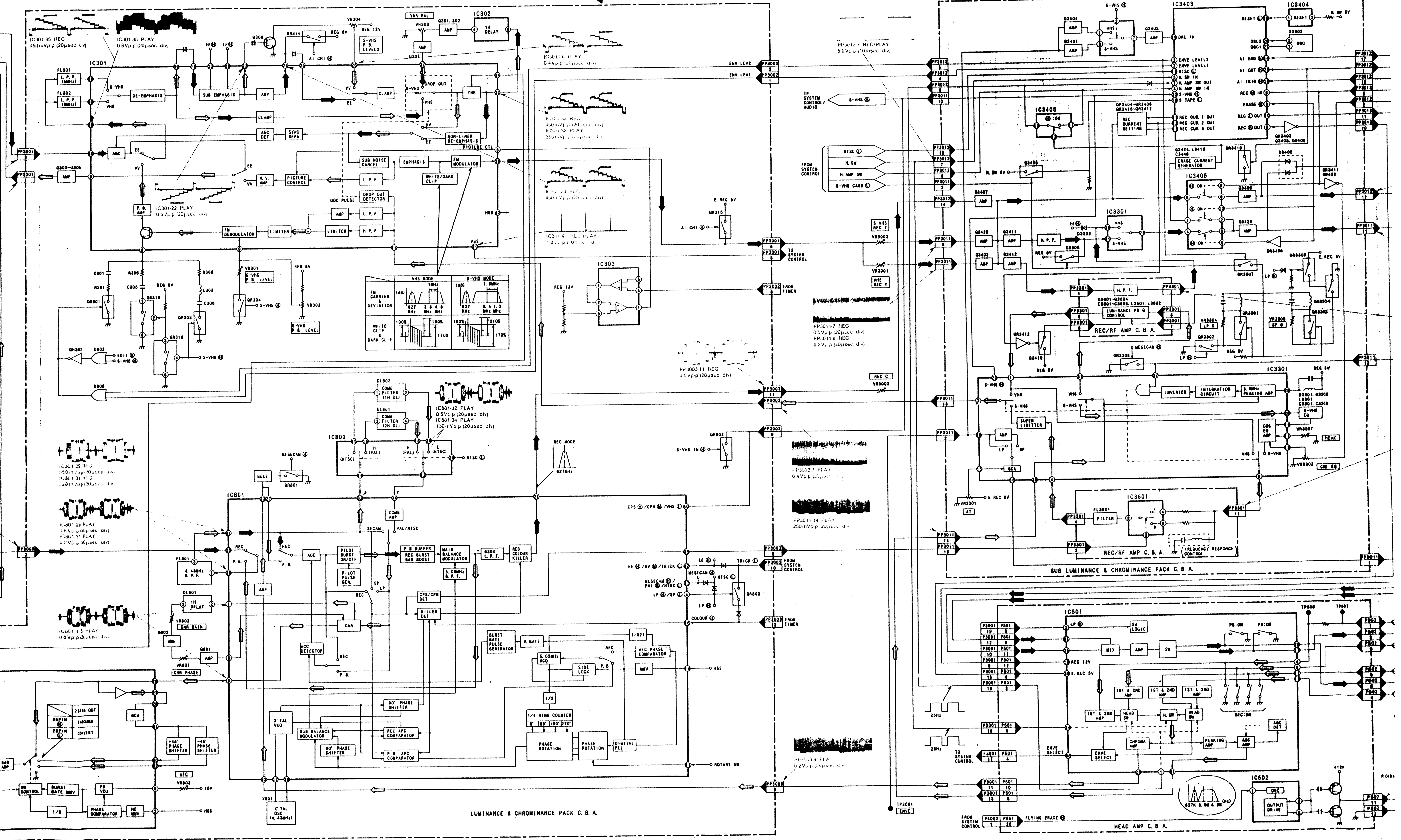

IC7501 TIMER IC
IC7502
RESET
IC7503 (EPROM)
IC7504
IC7505
DP7501
TIMER DISPLAY
SEGMENT SIGNAL
GRID SIGNAL
GRID SIGNALS
SEGMENT SIGNALS
METER L CH
METER R CH
FROM AUDIO
VR4004
METER ADJ
LEVEL METER 5V
T1701
Q1701
UNREG 14V
BACK UP 5V
C6030 (BACK UP)
TAPE IN
TIMER REC
STAND BY
OPERATE
TMR BUS CLK
TMR BUS LSH
TMR BUS TLK
TO/FROM VPS PACK
TO TV DEMODULATOR
CLK
DATA IN
DATA OUT
CS
POWER FAIL
SERIAL CLOCK
SERIAL DATA
RESET
S-VHS
STEREO
BILINGUAL
LEVEL METER 5V
AI LED
FROM DECODER
TO TIMER DISPLAY
OPERATION
STOP
EJECT
REW
FF
PAUSE/STILL
POWER
PLAY
PAL/MESECAM
REC
AUDIO OUT
PLAYER
RECODER
MARK IN
MARK OUT
ENTER
ESCAPE
PROG CLEAR
RESET
AV LINK
TIMER REC
CH DOWN/(-)
CH UP/(+)
SP/LP (NEXT)
SLEEP/(SHIFT)
PROG/CHECK
EDIT MENU
CLOCK SET
EDIT(-)
EDIT(+)
TUNER PRESET
IR6501
IR RECEIVER
32KHz (BACK UP)
X7502
TIMER OSC
X7501
4.19MHz
IC7501-6 STOP 5.0Vp-p (10usec/div)
IC7501-5 STOP 2.2Vp-p (5usec/div)
IC7501-2 STOP 2.0Vp-p (0.1usec/div)
SHUTTLE 1
SHUTTLE 2
SHUTTLE 3
SHUTTLE 4
JOG 1
JOG 2
SW7503 REMOTE MODE
SW7505 AI PICTURE
VTR1
VTR2
VTR3
SW7509 WIDE
AUTO
ON
OFF
SW7506 S-VHS
SW7504 HI-FI/NORMAL MIX
SW7510 TBC
SW7502 EDIT MODE
RECORDER
PLAYER
PASSIVE
TO EDIT
TO TBC
TO AUDIO
TO VIDEO
SW7507 INPUT SELECT
LINE
S-VHS
SW7508 VIDEO MODE
COLOUR
B/W
MECHANISM CONNECTION
SW1502 S-VHS CASSETTE SW
TAKE UP PHOTO TR Q1501
SUPPLY PHOTO TR Q1502
D1501 SENSOR LED
IC1501 T.REEL SNS
IC1502 S.REEL SNS
SW1501 SAFETY TAB SW
MODE SW
POSITION SW
LOADING MOTOR
VHS CASSETTE
T. PHOTO
GND
POSW 2
POSW 1
POSW 3
S. PHOTO
SNS LED
S. REEL
REEL +B
T. REEL
LOADING M (+)
LOADING M (-)
S. TAB
<TIMING CHART>
SW 1
SW 2
SW 3
POSITION NO.
MODE
EJECT
CASSETTE DOWN
MID
REV
PLAY STOP3
STOP
FFREW

3-4. LUMINANCE & CHROMINANCE BLOCK DIAGRAM

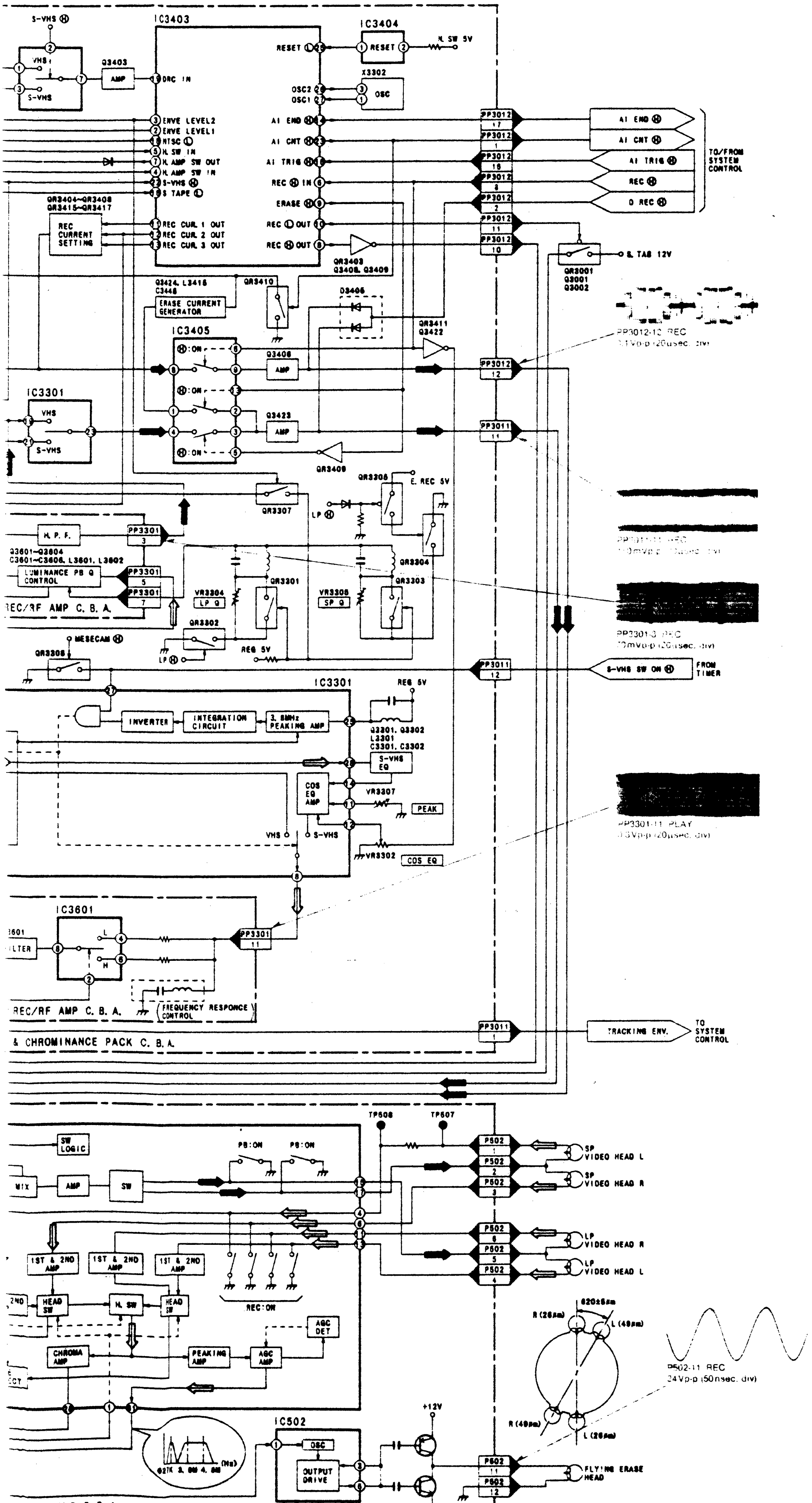

TO RF CONVERTER
VIDEO OUT
FROM EDIT
OSD ON
Q3004 AMP
FL3001 L.P.F.
TO VPS
VIDEO SIG
TO EDIT
TEST SIG
PP3022
PP3023
TEST SIGNAL
AV2
RED
BLUE
GREEN
VIDEO
PB 12V
Q3903
SW3901 NOR-Y/C-TEST
REG 5V
Q3905, 06, 08 AMP
IC3901
Q3901
Q3902
+6dB
0dB
IC3902 AGC
VR3901
TUNER VIDEO
FROM TUNER
FL3902 4.43MHz B.P.F.
FL3901 NOTCH FILTER (4.43MHz TRAP)
J3004 S-OUT
TUNER
AV1
AV3
C/RED
Y/VIDEO
FROM EDIT EDIT CTL VTR
FROM VIDEO EE CANAL INSA INSB INSC
FROM POWER POWER ON (REG 12V)
LOGIC
TO IC4801-3
TO IC4801-10
AV3
QR3903
J4605 VIDEO OUT
C-OUT TP3021
Y-OUT TP3021
FROM SYSTEM CONTROL
WIDE REC
UNREG 14V
QR3916
QR3917
Q3918
QR3904
QR3906
QR3905
K.SW 5V
Q3915
Q3914
Q3913
D3904
IC3904
UNREG 14V
REG 12V
Q3907
QR3901
D3906
QR3902
FROM SYSTEM CONTROL
WIDE
INPUT/OUTPUT PACK C.B.A.
FROM TIMER
S-VHS IN
IC3002
VIDEO IN
JK6507
JK6508 S-VHS INPUT SOCKET
PS6502 PP7502 P7503 P3002
PS6501 PP7501 P7503 P3002
OPERATION C.B.A.
TO/FROM VITC (OPTION)
P3004
EE C MUTE
(EXCEPT VITC)
IC3502
IC3503
IC3504
Q3501 AMP
IC3501 (OSD)
Q3502 AMP
Y OUT
Y IN
CS
CLK
DATA
OSC IN
OSC OUT
FROM EDIT
COLOUR BACK
OSD CS
OSD CLOCK
OSD DATA
PP3013
SUB LUMINANCE & CHROMINANCE PACK C.B.A.
FROM VITC (OPTION)
P3004
TO/FROM TBC
P3003
IC3001
OSD
VV
EE
(EXCEPT VITC)
Q3003
L3004
TBC
OSD ON
FL301 L.P.F. (6MHz)
FL302 L.P.F. (3MHz)
PP3001
Q303-Q305 AMP
QR302
PP3002
CHROMA LEVEL
IC802
Q803 AMP
VR801
QR309
QR311
QR312
LP
QR310
QR313
NTSC
S-VHS
6dB AMP
23PIN OUT
23PIN THROUGH
23PIN CONVERT
SUB CONTROL
BURST GATE
1/2
PHASE COMPARA
FM VCO

MAIN SIGNAL PATH IN REC MODE

MAIN SIGNAL PATH IN PLAYBACK MODE

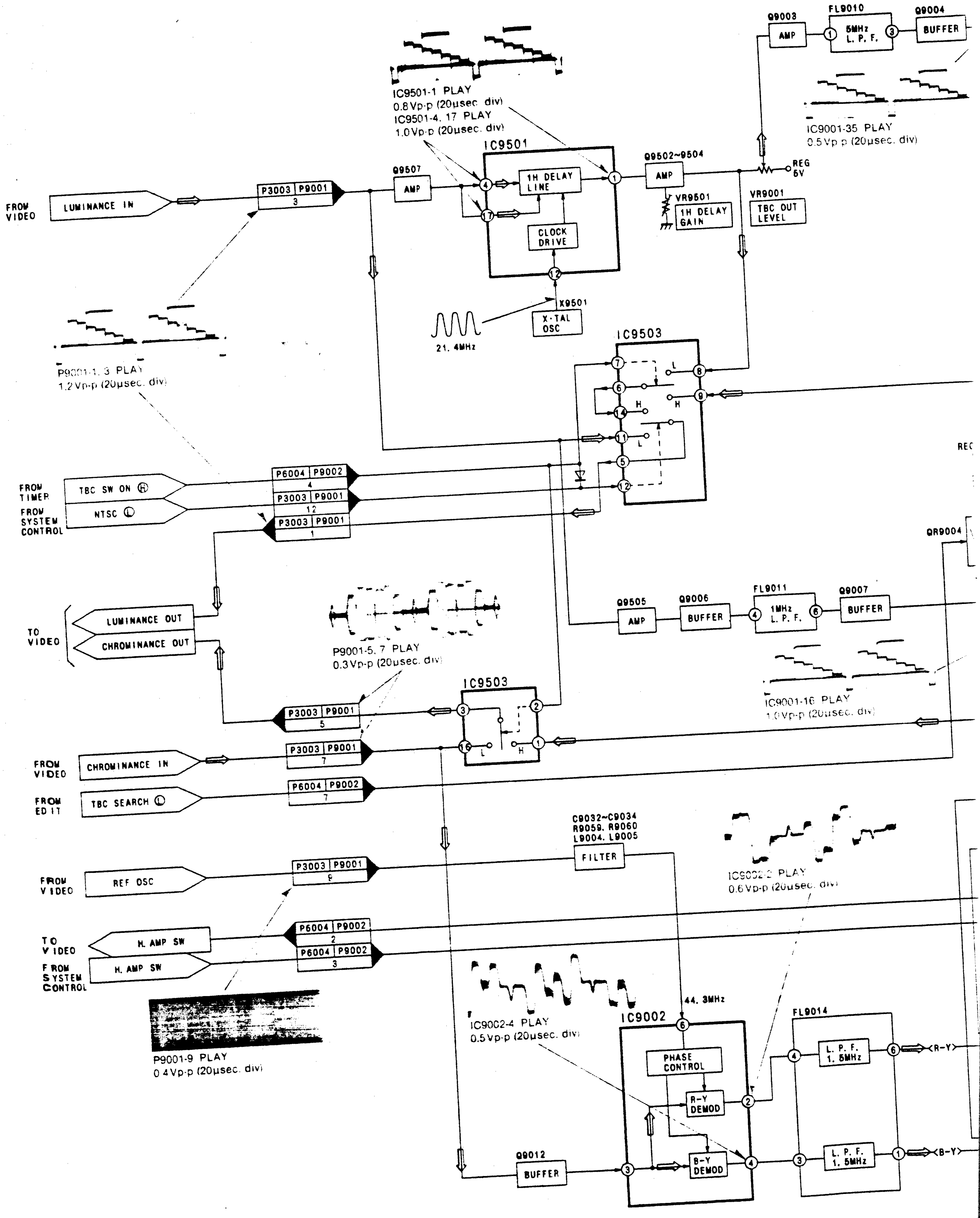

IC301-35 REC 450mVp-p (20μsec div)
IC301-35 PLAY 0.8Vp-p (20μsec div)
IC301
FL301 L.P.F. (6MHz)
FL302 L.P.F. (3MHz)
S-VHS
VHS
DE-EMPHASIS
SUB EMPHASIS
AMP
CLAMP
AGC DET
SYNC SEPA
AGC
Q303~Q305
V.V. AMP
PICTURE CONTROL
PP3001
P.B. AMP
IC301-22 PLAY 0.5Vp-p (20μsec div)
FM DEMODULATOR
LIMITER
H.P.F.
L.P.F.
DROP OUT DETECTOR
DOC PULSE
WHITE/DARK CLIP
FM MODULATOR
EMPHASIS
SUB NOISE CANCEL
NON-LINEAR DE-EMPHASIS
PICTURE CTL
YNR
YNR BAL
VR303
VR304
Q301, 302
IC302
1H DELAY
QR314
REG 5V
REG 12V
S-VHS P.B. LEVEL2
DROP OUT
AI CNT
IC301-26 PLAY 0.4Vp-p (20μsec div)
IC301-32 REC 450mVp-p (20μsec div)
IC301-32 PLAY 350mVp-p (20μsec div)
IC301-24 REC 450mVp-p (20μsec div)
IC301-41 REC PLAY 1.5Vp-p (10msec div)
ENV LEV2
ENV LEV1
VHS MODE
S-VHS MODE
FM CARRIER & DEVIATION
WHITE CLIP & DARK CLIP
VR301 S-VHS P.B. LEVEL
VR302 S-VHS P.B. LEVEL
QR301
QR304
QR315
QR316
QR303
QR318
D303
D308
EDIT
IC303
REG 12V
E. REC 5V
TO SYSTEM CONTROL
FROM TIMER
PP3011-7 REC 0.5Vp-p (20μsec div)
PP3011-6 REC 0.2Vp-p (20μsec div)
PP3003-11 REC 0.5Vp-p (20μsec div)
PP3002-7 PLAY 0.4Vp-p
PP3011-14 PLAY 250mVp-p (20μsec div)
PP3003-9 PLAY 0.2Vp-p (20μsec div)
DL802 COMB FILTER (1H DL)
DL801 COMB FILTER (2H DL)
IC301-32 PLAY 0.5Vp-p (20μsec div)
IC301-34 PLAY 130mVp-p (20μsec div)
IC802
NTSC
PAL
MESECAM
BELL
QR801
QR802
IC801
REC MODE 627KHz
IC301-25 REC
IC301-31 REC
IC801-26 PLAY
IC801-31 PLAY
IC801-15 PLAY 0.8Vp-p (20μsec div)
FL801 4.43MHz B.P.F.
DL801 1H DELAY
VR802 CNR GAIN
VR801 CNR PHASE
ACC
ACC DETECTOR
CNR
COMB AMP
SECAM
PAL/NTSC
PILOT BURST ON/OFF
PILOT PULSE GEN.
P.B. BUFFER REC BURST 6dB BOOST
MAIN BALANCE MODULATOR
5.06MHz B.P.F.
630K L.P.F.
REC COLOUR KILLER
CPS/CPN DET
KILLER DET
BURST GATE PULSE GENERATOR
V. GATE
5.02MHz VCO
SIDE LOCK
1/321
AFC PHASE COMPARATOR
MMV
1/2
1/4 RING COUNTER
PHASE ROTATION
DIGITAL PLL
X'TAL VCO
SUB BALANCE MODULATOR
90° PHASE SHIFTER
REC APC COMPARATOR
P.B. APC COMPARATOR
X801 X'TAL OSC (4.43MHz)
CPS / CPN / VHS
EE / VV / TRICK
MESECAM / PAL / NTSC
LP / SP
COLOUR
HSS
ROTARY SW
QR803
LUMINANCE & CHROMINANCE PACK C.B.A.
GCA
+45° PHASE SHIFTER
-45° PHASE SHIFTER
AFC
VR803
25PIN OUT
THROUGH
CONVERT
SW CONTROL
BURST GATE MMV
FH VCO
PHASE COMPARATOR
HD MMV
PP3012-7 REC/PLAY 5.0Vp-p (10msec div)
TP SYSTEM CONTROL/AUDIO
FROM SYSTEM CONTROL
NTSC
H. SW
H. AMP SW
S-VHS CASS
S-VHS REC Y
VR3002
VR3001
VHS REC Y
REC C
VR3003
IC3403
IC3404
RESET
OSC
DRC IN
ENVE LEVEL2
ENVE LEVEL1
H. SW IN
H. AMP SW OUT
H. AMP SW IN
S-VHS
S TAPE
REC CUR. 1 OUT
REC CUR. 2 OUT
REC CUR. 3 OUT
AI END
AI CNT
AI TRIG
REC IN
ERASE
REC OUT
REC CURRENT SETTING
QR3404~QR3408 QR3416~QR3417
IC3406
IC3405
Q3404
Q3401
Q3403
Q3424, L3415 C3448
ERASE CURRENT GENERATOR
QR3410
D3406
QR3411 Q3422
QR3402 Q3405, Q3406
Q3407
Q3408
Q3411
Q3412
H.P.F.
D3302
QR3305
IC3301
QR3306
QR3307
QR3308
Q3601~Q3604 C3601~C3608, L3601, L3602
LUMINANCE PB Q CONTROL
REC/RF AMP C.B.A.
VR3304
VR3306
QR3301
QR3302
QR3303
QR3304
QR3412
Q3410
MESECAM
INVERTER
INTEGRATION CIRCUIT
3.9MHz PEAKING AMP
Q3301, Q3302 L3301 C3301, C3302
S-VHS EQ
SUPER LIMITTER
COS EQ AMP
VR3307
PEAK
VR3302
COS EQ
IC3601
FL3601 FILTER
FREQUENCY RESPONCE CONTROL
AT
SUB LUMINANCE & CHROMINANCE PACK C.B.A.
IC501
SW LOGIC
MIX
AMP
SW
PB:ON
REC 12V
E. REC 5V
1ST & 2ND AMP
HEAD SW
H. SW
REC:ON
AGC DET
PEAKING AMP
CHROMA AMP
ENVE SELECT
IC502
OSC
OUTPUT DRIVE
TP3001 ENVE
FLYING ERASE
HEAD AMP C.B.A.
627K 5.06 4.06 (Hz)
25Hz
TP506
TP507
TO SYSTEM CONTROL
P3001 P501
P4002 P651

PATH IN PLAYBACK MODE

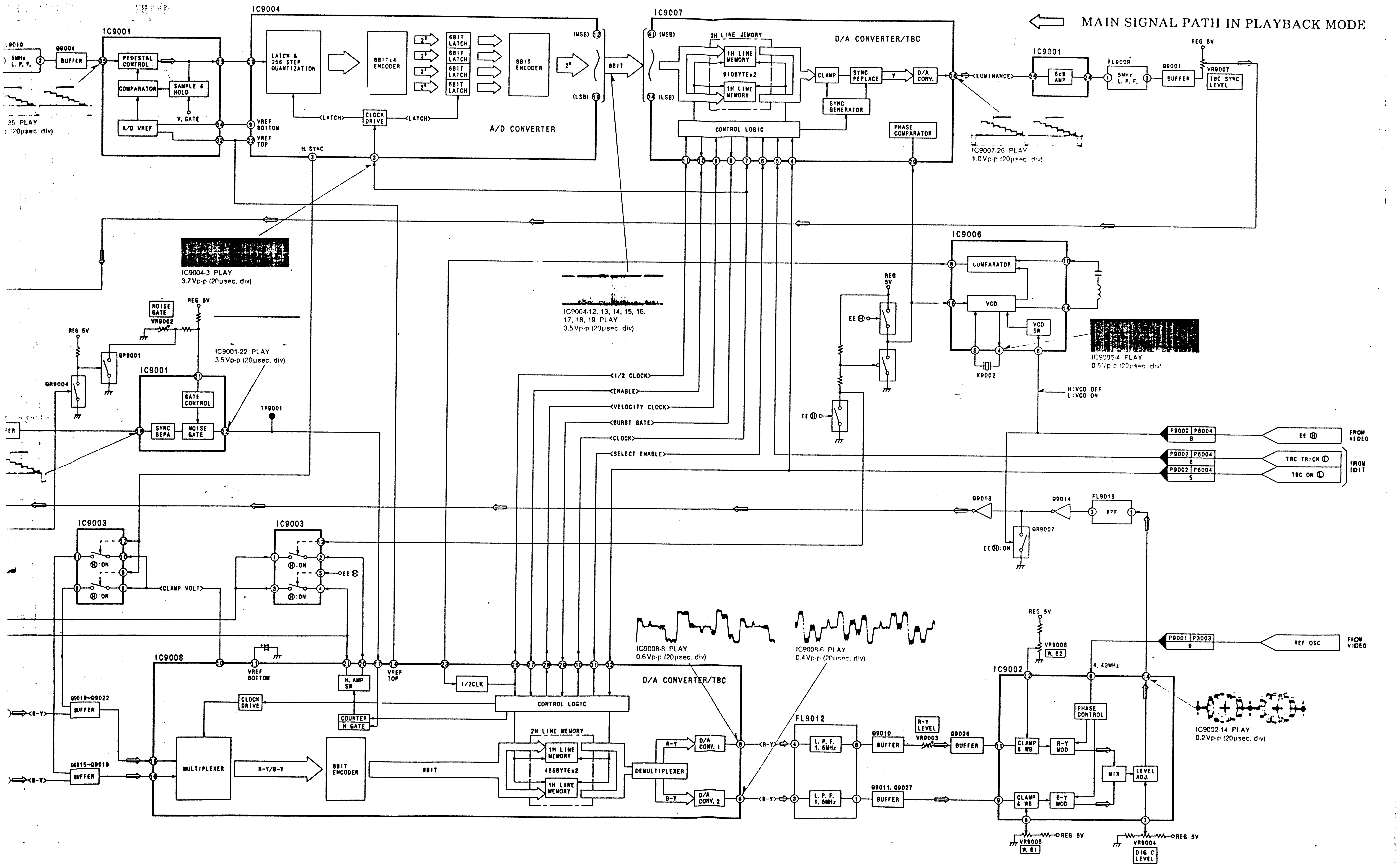


S-VHS Ⓗ
VHS
S-VHS
Q3403
AMP
IC3403
OSC IN
ENVE LEVEL2
ENVE LEVEL1
NTSC Ⓛ
H. SW IN
H. AMP SW OUT
H. AMP SW IN
S-VHS Ⓗ
S TAPE Ⓛ
QR3404~QR3408
QR3415~QR3417
REC CURRENT SETTING
REC CUR. 1 OUT
REC CUR. 2 OUT
REC CUR. 3 OUT
RESET Ⓛ
OSC2
OSC1
AI ENB Ⓗ
AI CNT Ⓗ
AI TRIG Ⓗ
REC Ⓗ IN
ERASE Ⓗ
REC Ⓛ OUT
REC Ⓗ OUT
IC3404
RESET
H. SW 5V
X3302
OSC
QR3403
Q3408, Q3409
PP3012
TO/FROM SYSTEM CONTROL
D REC Ⓗ
QR3001
Q3001
Q3002
S. TAB 12V
Q3424, L3415
C3448
ERASE CURRENT GENERATOR
QR3410
D3406
QR3411
Q3422
IC3405
Ⓗ:ON
Q3406
AMP
Q3423
QR3409
PP3012-12 REC
0.1Vp-p (20μsec. div)
PP3011
IC3301
VHS
S-VHS
PP3011-11 REC
10mVp-p (10μsec. div)
QR3307
QR3305
E. REC 5V
LP Ⓗ
QR3304
QR3301
QR3303
H. P. F.
PP3301
Q3601~Q3604
C3601~C3606, L3601, L3602
LUMINANCE PB Q CONTROL
REC/RF AMP C. B. A.
VR3304
LP Q
VR3305
SP Q
QR3302
REG 5V
PP3301-3 REC
70mVp-p (20μsec. div)
MESECAM Ⓗ
QR3308
S-VHS SW ON Ⓗ
FROM TIMER
IC3301
REG 5V
INVERTER
INTEGRATION CIRCUIT
3. 8MHz PEAKING AMP
Q3301, Q3302
L3301
C3301, C3302
S-VHS EQ
COS EQ AMP
VR3307
PEAK
VHS
S-VHS
VR3302
COS EQ
PP3301-11 PLAY
0.3Vp-p (20μsec. div)
IC3601
FILTER
L
H
FREQUENCY RESPONCE CONTROL
REC/RF AMP C. B. A.
& CHROMINANCE PACK C. B. A.
TRACKING ENV.
TO SYSTEM CONTROL
TP508
TP507
SW LOGIC
PB:ON
MIX
AMP
SW
P502
SP VIDEO HEAD L
SP VIDEO HEAD R
LP VIDEO HEAD R
LP VIDEO HEAD L
1ST & 2ND AMP
HEAD SW
H. SW
REC:ON
AGC DET
CHROMA AMP
PEAKING AMP
AGC AMP
2ND
ECT
627K 3. 58 4. 66
(Hz)
IC502
OSC
OUTPUT DRIVE
+12V
FLYING ERASE HEAD
HEAD AMP C. B. A.
620±5μm
R (26μm)
L (49μm)
R (49μm)
L (26μm)
P502-11 REC
24Vp-p (50nsec. div)

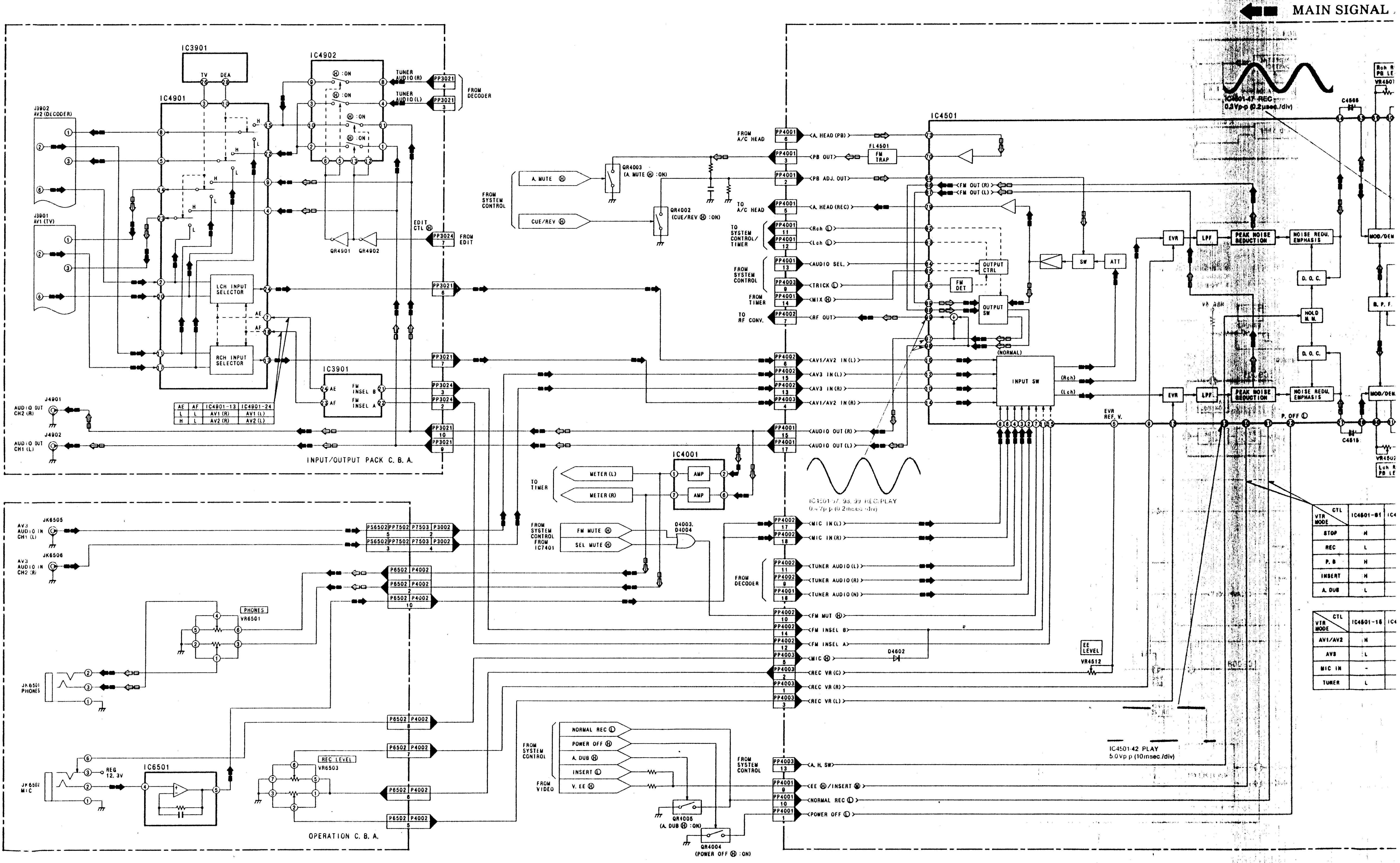
3-5. TBC BLOCK DIAGRAM


IC9501-1 PLAY
0.8Vp-p (20μsec. div)
IC9501-4, 17 PLAY
1.0Vp-p (20μsec. div)
IC9501
1H DELAY LINE
CLOCK DRIVE
X9501
X-TAL OSC
21. 4MHz
Q9507
AMP
Q9502~9504
AMP
VR9501
1H DELAY GAIN
VR9001
TBC OUT LEVEL
REG 5V
Q9003
AMP
FL9010
5MHz L. P. F.
Q9004
BUFFER
IC9001-35 PLAY
0.5Vp-p (20μsec. div)
FROM VIDEO
LUMINANCE IN
P3003
P9001
3
P9001-1, 3 PLAY
1.2Vp-p (20μsec. div)
IC9503
L
H
REC
FROM TIMER
TBC SW ON Ⓗ
FROM SYSTEM CONTROL
NTSC Ⓛ
P6004
P9002
4
12
1
QR9004
TO VIDEO
LUMINANCE OUT
CHROMINANCE OUT
P9001-5, 7 PLAY
0.3Vp-p (20μsec. div)
Q9505
AMP
Q9006
BUFFER
FL9011
1MHz L. P. F.
Q9007
BUFFER
IC9001-16 PLAY
1.0Vp-p (20μsec. div)
5
7
FROM VIDEO
CHROMINANCE IN
FROM EDIT
TBC SEARCH Ⓛ
C9032~C9034
R9059, R9060
L9004, L9005
FILTER
IC9002-2 PLAY
0.6Vp-p (20μsec. div)
FROM VIDEO
REF OSC
9
TO VIDEO
H. AMP SW
FROM SYSTEM CONTROL
H. AMP SW
2
3
IC9002-4 PLAY
0.5Vp-p (20μsec. div)
44. 3MHz
IC9002
PHASE CONTROL
R-Y DEMOD
B-Y DEMOD
FL9014
L. P. F. 1. 5MHz
L. P. F. 1. 5MHz
(R-Y)
(B-Y)
Q9012
BUFFER
P9001-9 PLAY
0.4Vp-p (20μsec. div)

MAIN SIGNAL PATH IN PLAYBACK MODE


IC9004
IC9001
IC9007
L9010
5MHz L.P.F.
Q9004
BUFFER
PEDESTAL CONTROL
COMPARATOR
SAMPLE & HOLD
V. GATE
A/D VREF
LATCH & 256 STEP QUANTIZATION
8BITx4 ENCODER
8BIT LATCH
8BIT ENCODER
(MSB)
(LSB)
8BIT
VREF BOTTOM
VREF TOP
H. SYNC
<LATCH>
CLOCK DRIVE
A/D CONVERTER
2H LINE MEMORY
1H LINE MEMORY
910BYTEx2
D/A CONVERTER/TBC
CLAMP
SYNC PEPLACE
Y
D/A CONV.
SYNC GENERATOR
CONTROL LOGIC
PHASE COMPARATOR
<LUMINANCE>
6dB AMP
FL9009
5MHz L.P.F.
Q9001
REG 5V
VR9007
TBC SYNC LEVEL
IC9007-26 PLAY
1.0Vp-p (20μsec. div)
25 PLAY
(20μsec. div)
IC9004-3 PLAY
3.7Vp-p (20μsec. div)
IC9004-12, 13, 14, 15, 16, 17, 18, 19 PLAY
3.5Vp-p (20μsec. div)
IC9006
COMPARATOR
VCO
VCO SW
X9002
IC9006-4 PLAY
0.5Vp-p (20μsec. div)
H:VCO OFF
L:VCO ON
EE Ⓗ
NOISE GATE
VR9002
QR9001
QR9004
IC9001-22 PLAY
3.5Vp-p (20μsec. div)
TP9001
GATE CONTROL
SYNC SEPA
NOISE GATE
<1/2 CLOCK>
<ENABLE>
<VELOCITY CLOCK>
<BURST GATE>
<CLOCK>
<SELECT ENABLE>
P9002 P6004 8
P9002 P6004 6
P9002 P6004 5
EE Ⓗ
TBC TRICK Ⓛ
TBC ON Ⓛ
FROM VIDEO
FROM EDIT
Q9013
Q9014
FL9013
BPF
QR9007
EE Ⓗ:ON
IC9003
Ⓗ:ON
<CLAMP VOLT>
IC9008
VREF BOTTOM
VREF TOP
H. AMP SW
1/2CLK
CLOCK DRIVE
COUNTER H GATE
CONTROL LOGIC
MULTIPLEXER
R-Y/B-Y
8BIT ENCODER
8BIT
455BYTEx2
DEMULTIPLEXER
R-Y
B-Y
D/A CONV. 1
D/A CONV. 2
Q9019~Q9022
Q9015~Q9018
<R-Y>
<B-Y>
IC9008-8 PLAY
0.6Vp-p (20μsec. div)
IC9008-6 PLAY
0.4Vp-p (20μsec. div)
FL9012
L.P.F. 1.5MHz
Q9010
Q9011, Q9027
R-Y LEVEL
VR9003
Q9026
IC9002
VR9006
W. B2
4.43MHz
PHASE CONTROL
CLAMP & WB
R-Y MOD
B-Y MOD
MIX
LEVEL ADJ.
VR9005
W. B1
VR9004
DIG C LEVEL
P9001 P3003 9
REF OSC
FROM VIDEO
IC9002-14 PLAY
0.2Vp-p (20μsec. div)

3-6. Hi-Fi AUDIO BLOCK DIAGRAM


MAIN SIGNAL
IC3901
TV
DEA
IC4902
IC4901
J3902
AV2 (DECODER)
J3901
AV1 (TV)
H : ON
TUNER AUDIO (R)
TUNER AUDIO (L)
PP3021
FROM DECODER
EDIT CTL H
PP3024
FROM EDIT
QR4501
QR4902
LCH INPUT SELECTOR
RCH INPUT SELECTOR
AE
AF
FM INSEL B
FM INSEL A
J4901
AUDIO OUT CH2 (R)
J4902
AUDIO OUT CH1 (L)
INPUT/OUTPUT PACK C. B. A.
FROM A/C HEAD
PP4001
A. HEAD (PB)
PB OUT
FL4501
FM TRAP
PB ADJ. OUT
A. MUTE H
QR4003
(A. MUTE H : ON)
FROM SYSTEM CONTROL
CUE/REV H
QR4002
(CUE/REV H : ON)
TO A/C HEAD
A. HEAD (REC)
TO SYSTEM CONTROL/TIMER
Rch L
Lch L
FROM SYSTEM CONTROL
AUDIO SEL.
PP4003
TRICK L
FROM TIMER
MIX H
TO RF CONV.
PP4002
RF OUT
IC4501
FM OUT (R)
FM OUT (L)
OUTPUT CTRL
FM DET
OUTPUT SW
SW
ATT
EVR
LPF
PEAK NOISE REDUCTION
NOISE REDU. EMPHASIS
D. O. C.
HOLD M. M.
B. P. F.
MOD/DEM
Rch R
PB LE
VR4501
C4565
C4515
VR4502
Lch R
PB LE
IC4501-47 REC
0.3Vp-p (0.2μsec./div)
(NORMAL)
INPUT SW
(Rch)
(Lch)
AV1/AV2 IN (L)
AV3 IN (L)
AV3 IN (R)
AV1/AV2 IN (R)
EVR REF. V.
P. OFF L
AUDIO OUT (R)
AUDIO OUT (L)
IC4001
TO TIMER
METER (L)
METER (R)
AMP
IC4501-57, 98, 99 REC/PLAY
0.4Vp-p (0.2msec./div)
AV3 AUDIO IN CH1 (L)
JK6505
AV3 AUDIO IN CH2 (R)
JK6506
PS6502
PP7502
P7503
P3002
FROM SYSTEM CONTROL FROM IC7401
FM MUTE H
SEL MUTE H
D4003, D4004
MIC IN (L)
MIC IN (R)
FROM DECODER
TUNER AUDIO (L)
TUNER AUDIO (R)
TUNER AUDIO (N)
FM MUT H
FM INSEL B
FM INSEL A
MIC H
D4602
EE LEVEL
VR4512
REC VR (C)
REC VR (R)
REC VR (L)
P6502
P4002
PHONES
VR6501
JK6501 PHONES
JK6502 MIC
REG 12.3V
IC6501
REC LEVEL
VR6503
OPERATION C. B. A.
NORMAL REC L
POWER OFF H
A. DUB H
INSERT L
V. EE H
FROM VIDEO
QR4005
(A. DUB H : ON)
QR4004
(POWER OFF H : ON)
A. H. SW
EE H/INSERT H
NORMAL REC L
POWER OFF L
IC4501-42 PLAY
5.0Vp-p (10msec./div)

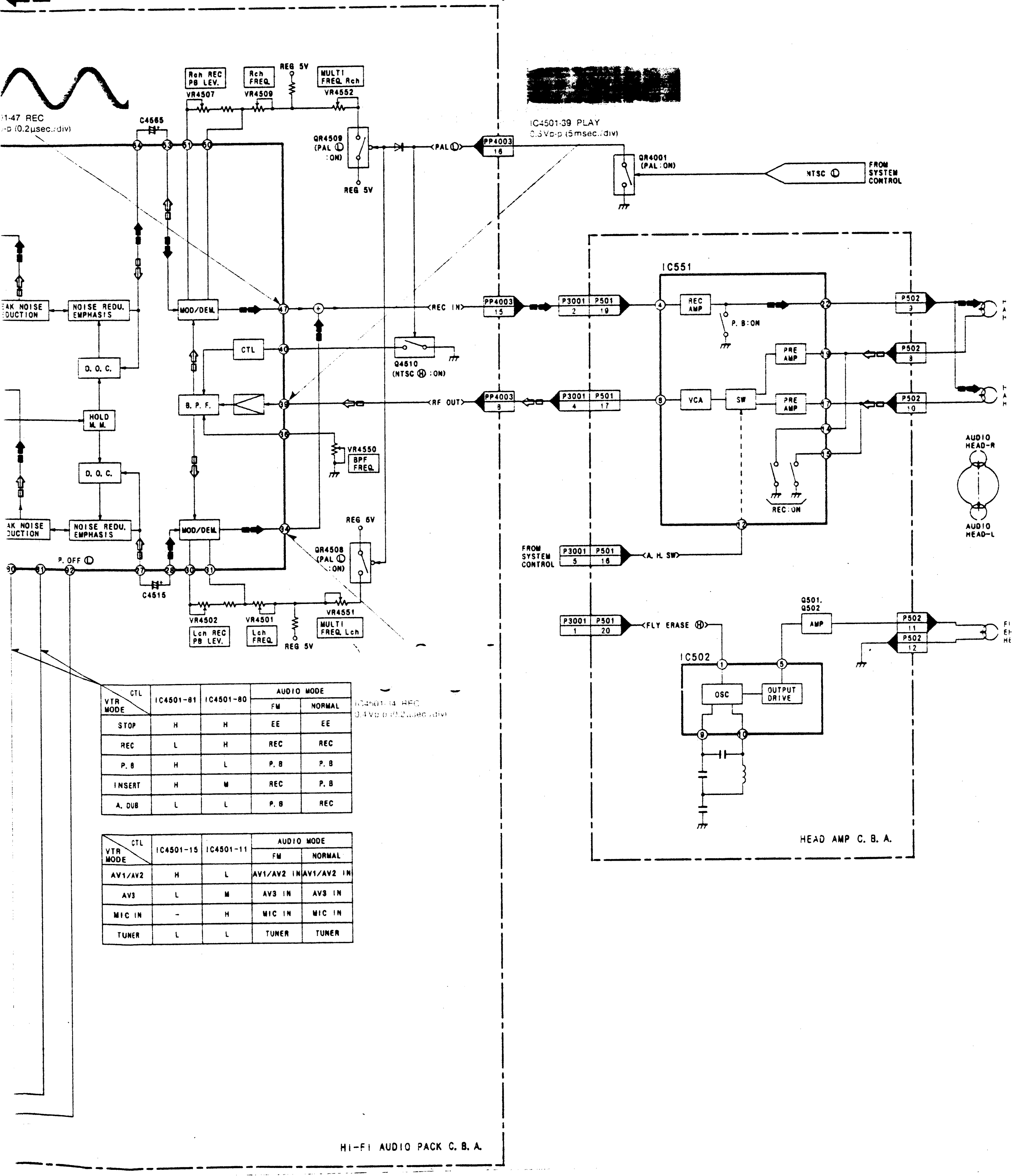
AE	AF	IC4901-13	IC4901-24
L	L	AV1 (R)	AV1 (L)
H	L	AV2 (R)	AV2 (L)

VTR MODE \ CTL	IC4501-81	IC4
STOP	H	
REC	L	
P. B	H	
INSERT	H	
A. DUB	L	

VTR MODE \ CTL	IC4501-16	IC4
AV1/AV2	H	
AV3	L	
MIC IN	-	
TUNER	L	

MAIN SIGNAL PATH IN REC MODE

MAIN SIGNAL PATH IN PLAYBACK MODE



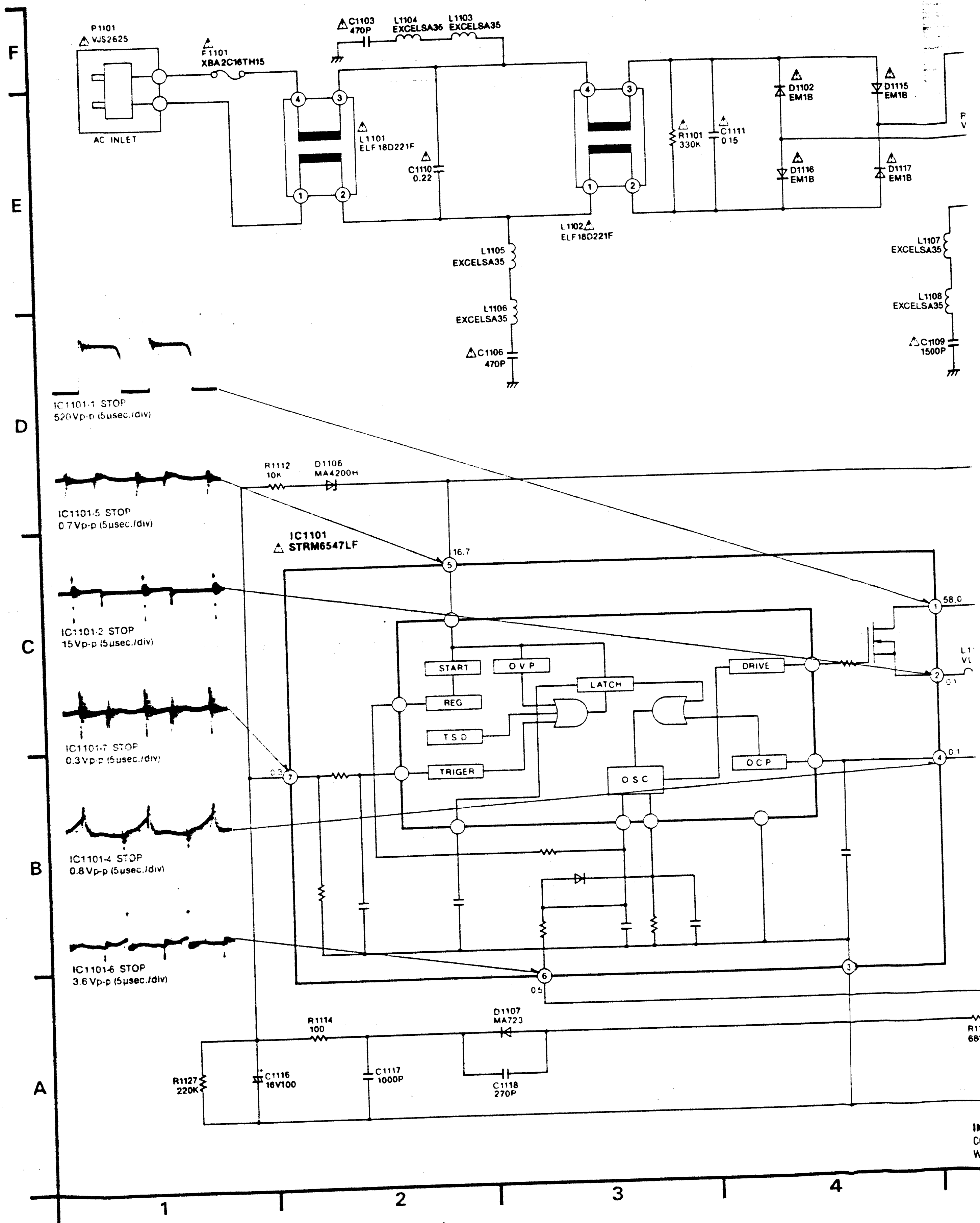
1-47 REC
-p (0.2µsec./div)
C4565
Rch REC PB LEV.
VR4507
Rch FREQ.
VR4509
REG 5V
MULTI FREQ. Rch
VR4552
QR4509 (PAL Ⓛ :ON)
REG 5V
PAL Ⓛ
PP4003 16
[redacted]
IC4501-39 PLAY
0.5Vp-p (5msec./div)
QR4001 (PAL:ON)
NTSC Ⓛ
FROM SYSTEM CONTROL
AK NOISE DUCTION
NOISE REDU. EMPHASIS
MOD/DEM.
REC IN
PP4003 15
P3001 2
P501 19
IC551
REC AMP
P. B:ON
P502 9
CTL
Q4510 (NTSC Ⓗ :ON)
PRE AMP
P502 8
D. O. C.
B. P. F.
RF OUT
PP4003 8
P3001 4
P501 17
VCA
SW
PRE AMP
P502 10
HOLD M. M.
VR4550
BPF FREQ.
AUDIO HEAD-R
D. O. C.
REC:ON
AK NOISE DUCTION
NOISE REDU. EMPHASIS
MOD/DEM.
REG 5V
QR4508 (PAL Ⓛ :ON)
AUDIO HEAD-L
FROM SYSTEM CONTROL
P3001 5
P501 16
A. H. SW
P. OFF Ⓛ
C4515
VR4502
Lch REC PB LEV.
VR4501
Lch FREQ.
REG 5V
VR4551
MULTI FREQ. Lch
Q501, Q502
AMP
P3001 1
P501 20
FLY ERASE Ⓗ
P502 11
P502 12
IC502
OSC
OUTPUT DRIVE
IC4501-14 REC
0.4Vp-p (0.2µsec./div)
HEAD AMP C. B. A.
HI-FI AUDIO PACK C. B. A.

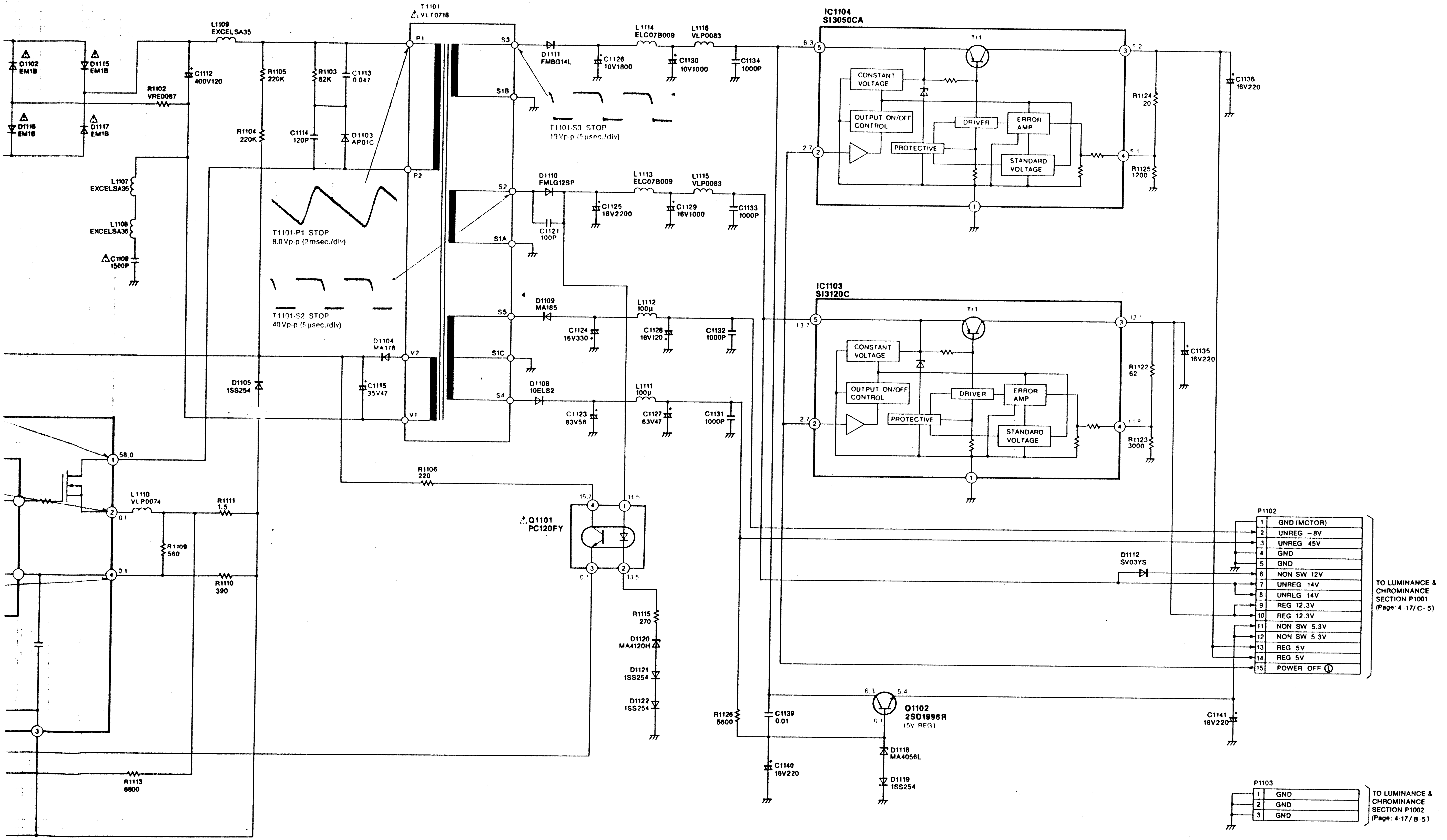
VTR MODE \ CTL	IC4501-81	IC4501-80	AUDIO MODE	
			FM	NORMAL
STOP	H	H	EE	EE
REC	L	H	REC	REC
P. B	H	L	P. B	P. B
INSERT	H	M	REC	P. B
A. DUB	L	L	P. B	REC

VTR MODE \ CTL	IC4501-15	IC4501-11	AUDIO MODE	
			FM	NORMAL
AV1/AV2	H	L	AV1/AV2 IN	AV1/AV2 IN
AV3	L	M	AV3 IN	AV3 IN
MIC IN	-	H	MIC IN	MIC IN
TUNER	L	L	TUNER	TUNER

SECTION 4
SCHEMATIC DIAGRAMS

4-1. POWER SCHEMATIC DIAGRAM


F
E
D
C
B
A
1
2
3
4
P1101
⚠ VJS2625
AC INLET
⚠ F1101
XBA2C16TH15
⚠ C1103
470P
L1104
EXCELSA35
L1103
EXCELSA35
⚠ L1101
ELF18D221F
⚠ C1110
0.22
L1102 ⚠
ELF18D221F
L1105
EXCELSA35
L1106
EXCELSA35
⚠ C1106
470P
⚠ R1101
330K
⚠ C1111
0.15
⚠ D1102
EM1B
⚠ D1116
EM1B
⚠ D1115
EM1B
⚠ D1117
EM1B
L1107
EXCELSA35
L1108
EXCELSA35
⚠ C1109
1500P
IC1101-1 STOP
520Vp-p (5μsec./div)
IC1101-5 STOP
0.7Vp-p (5μsec./div)
IC1101-2 STOP
15Vp-p (5μsec./div)
IC1101-7 STOP
0.3Vp-p (5μsec./div)
IC1101-4 STOP
0.8Vp-p (5μsec./div)
IC1101-6 STOP
3.6Vp-p (5μsec./div)
R1112
10K
D1106
MA4200H
IC1101
⚠ STRM6547LF
16.7
58.0
0.1
0.1
0.3
0.5
START
OVP
LATCH
REG
TSD
TRIGER
DRIVE
OCP
OSC
R1114
100
D1107
MA723
R1127
220K
C1116
16V100
C1117
1000P
C1118
270P


T1101
VLT0718
L1109
EXCELSA35
D1102
EM1B
D1115
EM1B
D1116
EM1B
D1117
EM1B
R1102
VRE0087
C1112
400V120
R1105
220K
R1103
82K
C1113
0.047
R1104
220K
C1114
120P
D1103
AP01C
L1107
EXCELSA35
L1108
EXCELSA35
C1109
1500P
P1
P2
V2
V1
S3
S1B
S2
S1A
S5
S1C
S4
T1101-P1 STOP
8.0Vp-p (2msec./div)
T1101-S2 STOP
40Vp-p (5µsec./div)
T1101-S3 STOP
19Vp-p (5µsec./div)
D1111
FMBG14L
L1114
ELC07B009
L1116
VLP0083
C1126
10V1800
C1130
10V1000
C1134
1000P
D1110
FMLG12SP
L1113
ELC07B009
L1115
VLP0083
C1125
16V2200
C1129
16V1000
C1133
1000P
C1121
100P
D1109
MA185
L1112
100µ
C1124
16V330
C1128
16V120
C1132
1000P
D1104
MA178
C1115
35V47
D1105
1SS254
D1108
10ELS2
L1111
100µ
C1123
63V56
C1127
63V47
C1131
1000P
IC1104
SI3050CA
Tr1
CONSTANT VOLTAGE
OUTPUT ON/OFF CONTROL
DRIVER
ERROR AMP
PROTECTIVE
STANDARD VOLTAGE
6.3
5.2
2.7
5.1
R1124
20
R1125
1200
C1136
16V220
IC1103
SI3120C
13.7
12.1
11.8
R1122
62
R1123
3000
C1135
16V220
58.0
0.1
L1110
VLP0074
R1111
1.5
R1109
560
R1110
390
R1106
220
Q1101
PC120FY
15.7
14.5
0.5
13.5
R1113
6800
R1115
270
D1120
MA4120H
D1121
1SS254
D1122
1SS254
R1126
5600
C1139
0.01
C1140
16V220
Q1102
2SD1996R
(5V REG)
6.3
5.4
6.1
D1118
MA4056L
D1119
1SS254
C1141
16V220
D1112
SV03YS
P1102
1 GND (MOTOR)
2 UNREG -8V
3 UNREG 45V
4 GND
5 GND
6 NON SW 12V
7 UNREG 14V
8 UNREG 14V
9 REG 12.3V
10 REG 12.3V
11 NON SW 5.3V
12 NON SW 5.3V
13 REG 5V
14 REG 5V
15 POWER OFF Ⓛ
TO LUMINANCE & CHROMINANCE SECTION P1001 (Page: 4-17/C-5)
P1103
1 GND
2 GND
3 GND
TO LUMINANCE & CHROMINANCE SECTION P1002 (Page: 4-17/B-5)

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

NOTE 1. WHEN MEASURE THE VOLTAGE OR WAVEFORM ON THE POWER TRANSFORMER CIRCUIT, SET THE GND TERMINAL OF MEASURING POINT AS FOLLOWS.
PRIMARY SIDE ...... IC1101-(3)
SECONDARY SIDE ... TP GND OF MAIN C.B.A.

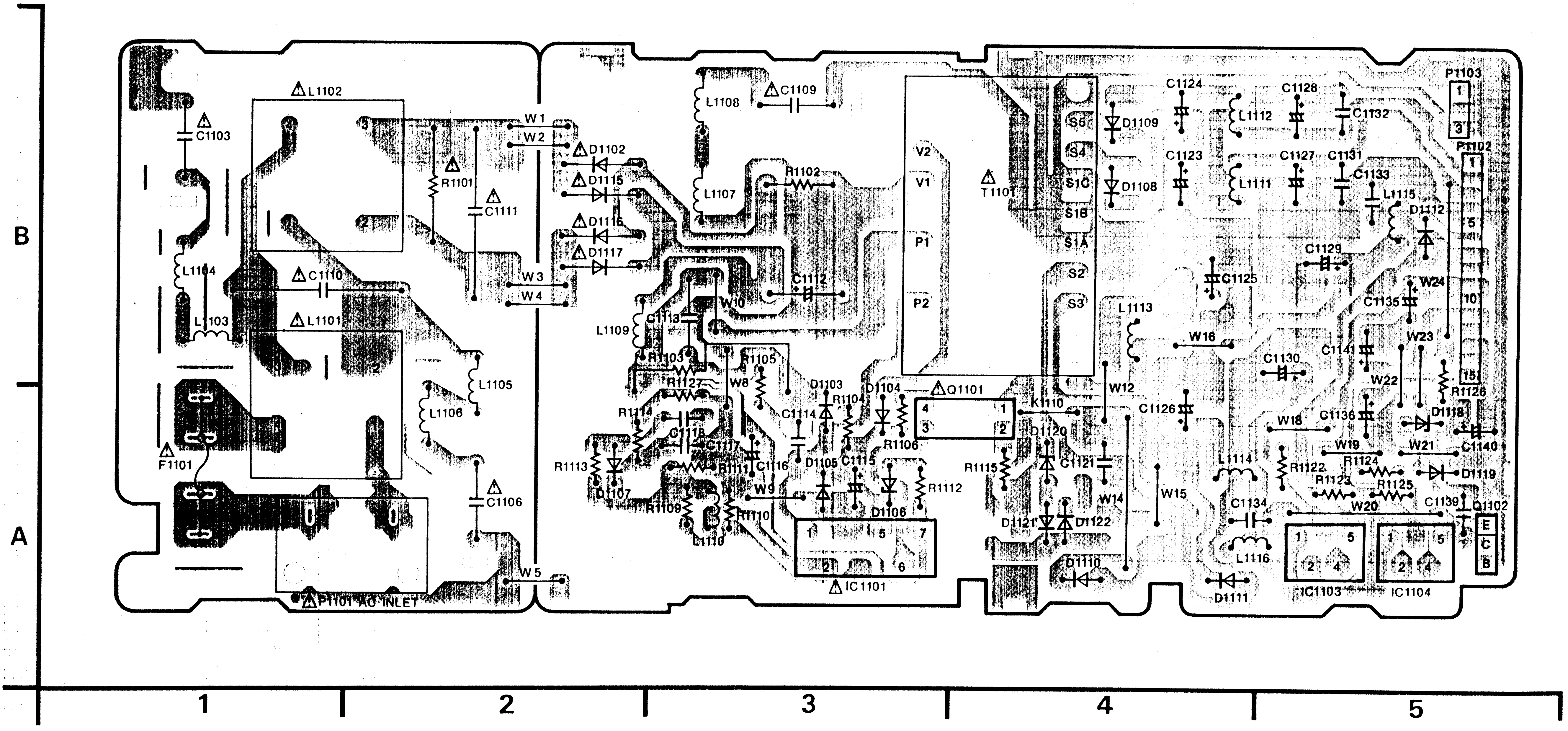
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

4 5 6 7 8 9 10 11 12

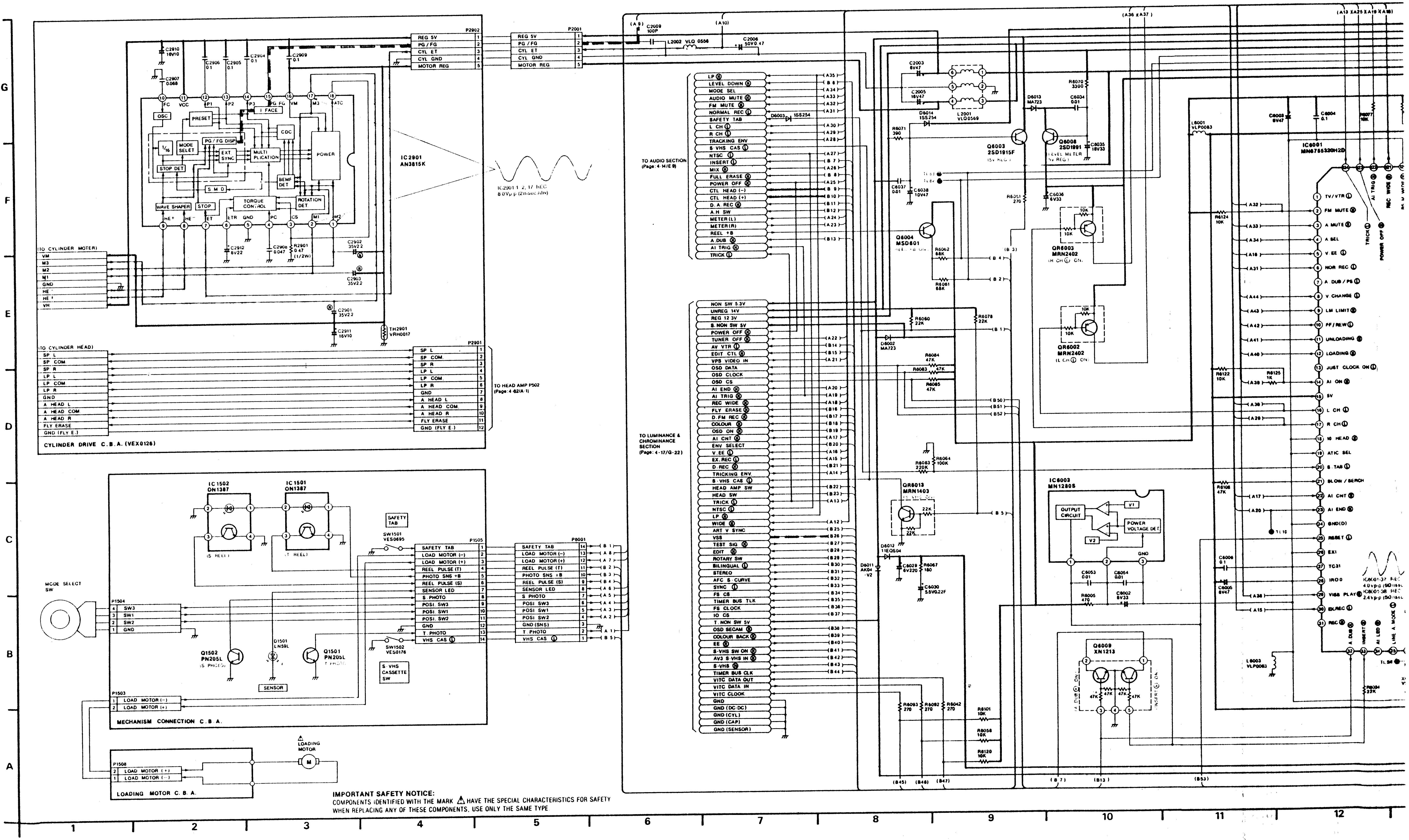
4-2. POWER C.B.A. (VEP01558C)

POWER C.B.A.	
Transistor	
Q1101 Q1102	A-4 A-5
Integrated Circuit	
IC1101 IC1103 IC1104	A-3 A-5 A-5
Connector	
P1101 P1102 P1103	A-1 B-5 B-5

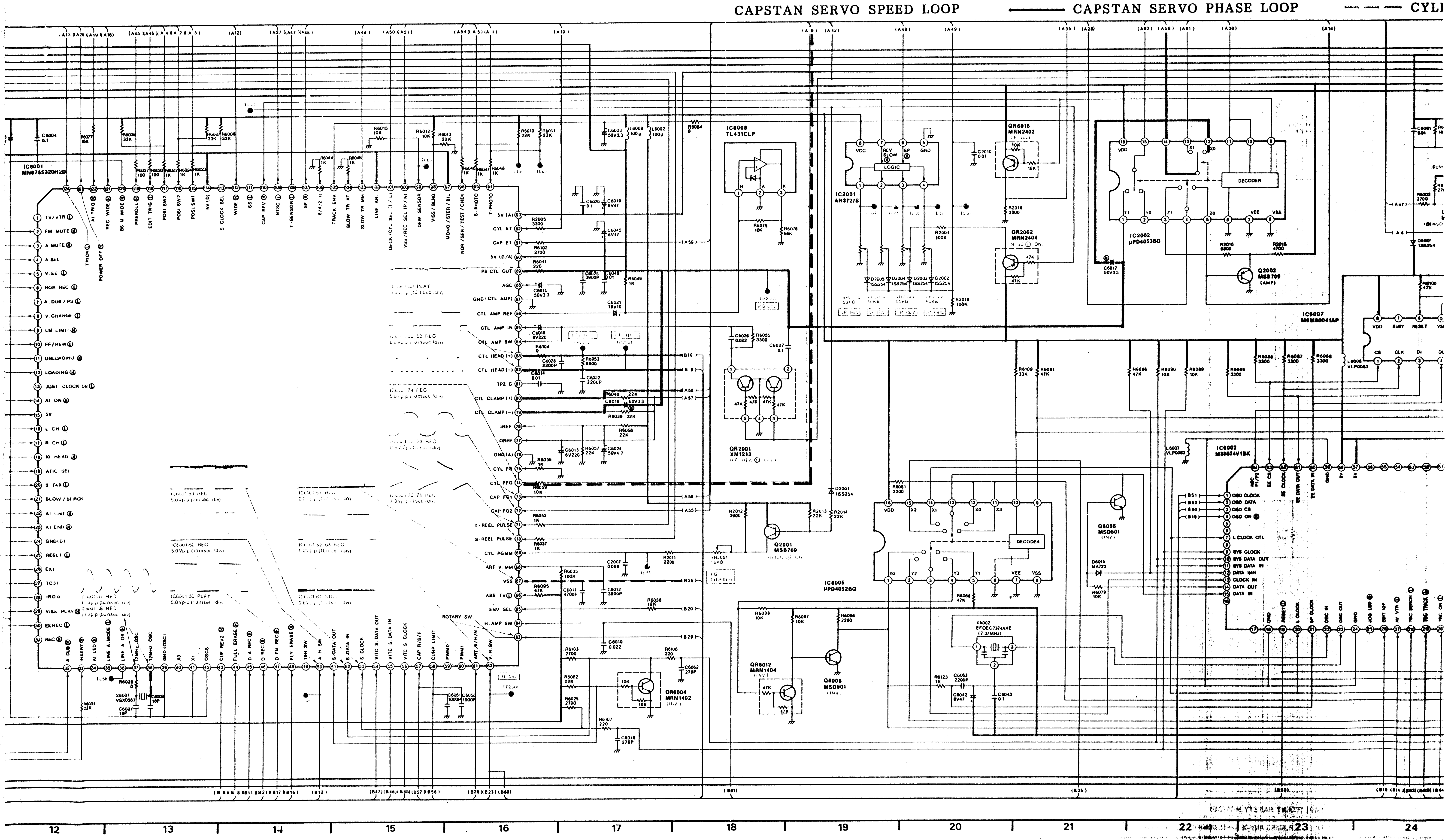
ADDRESS INFORMATION


B
A
1
2
3
4
5
L1102
C1103
R1101
C1111
W1
W2
W3
W4
W5
D1102
D1115
D1116
D1117
L1104
L1103
C1110
L1101
L1105
L1106
F1101
C1106
P1101 AC INLET
L1108
C1109
L1107
R1102
C1112
W10
L1109
C1113
R1103
R1127
R1105
W8
R1114
C1118
C1117
R1111
C1116
R1113
D1107
R1109
R1110
L1110
W9
D1103
R1104
C1114
D1104
D1105
C1115
D1106
R1106
R1112
IC1101
Q1101
T1101
V2
V1
P1
P2
S6
S4
S1C
S1B
S1A
S2
S3
D1109
D1108
K1110
D1120
C1121
R1115
W12
W14
D1121
D1122
D1110
L1113
C1126
C1124
C1123
L1112
L1111
C1128
C1127
C1132
C1131
C1133
L1115
D1112
C1129
C1125
W24
C1135
W16
W23
C1130
C1141
W22
R1126
D1118
C1136
W18
C1140
W19
W21
W15
L1114
R1122
R1124
R1123
R1125
D1119
C1134
W20
C1139
Q1102
E
C
B
L1116
D1111
IC1103
IC1104
P1103
P1102
10
15

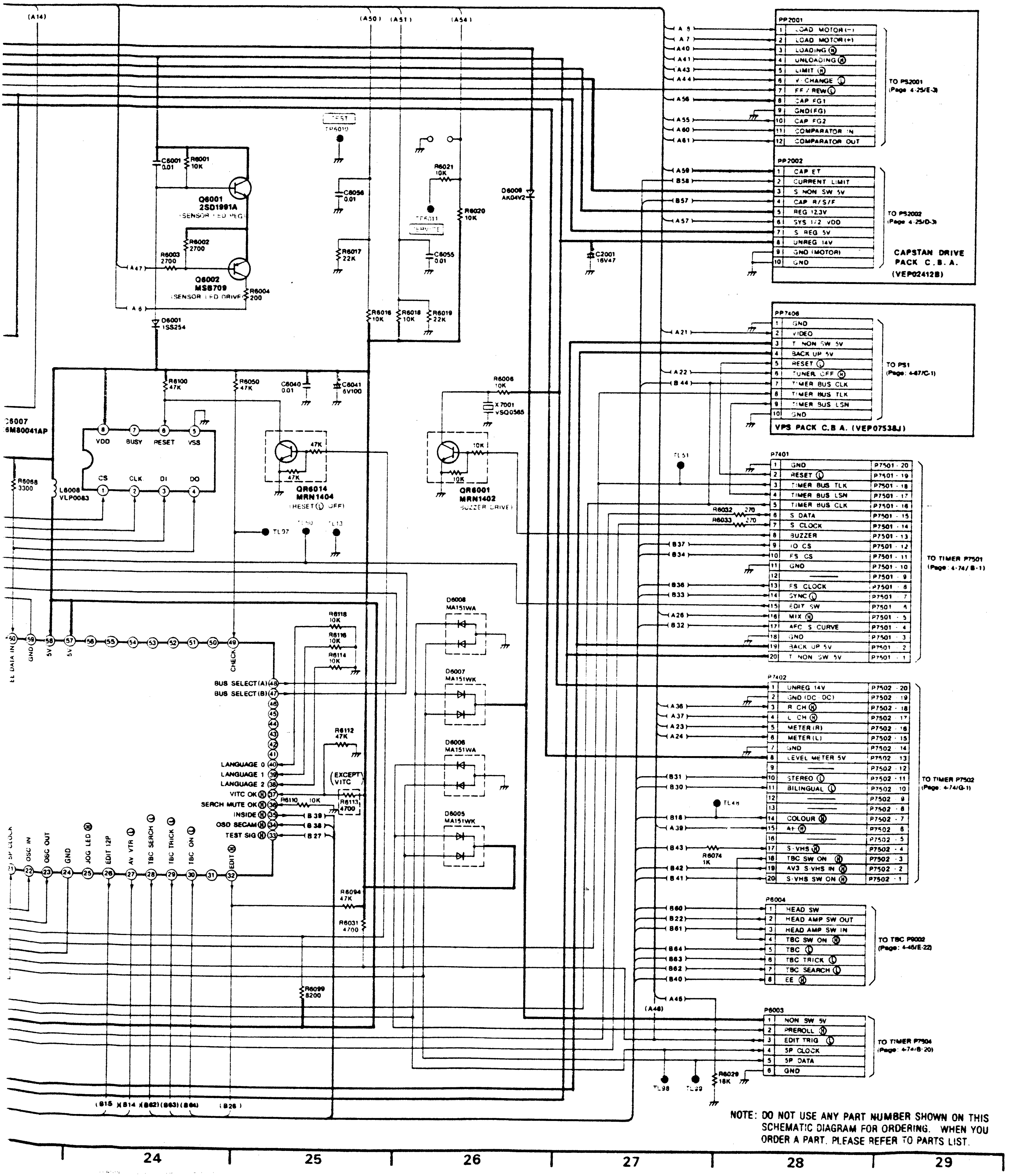
4-3. SYSTEM CONTROL & SERVO SECTION IN MAIN SCHEMATIC DIAGRAM


P2902
REG 5V
PG / FG
CYL ET
CYL GND
MOTOR REG
P2001
IC2901
AN3815K
OSC
PRESET
I FACE
CDC
MODE SELET
PG / FG DISP
EXT SYNC
MULTI PLICATION
POWER
STOP DET
BEMF DET
S M D
WAVE SHAPER
STOP
TORQUE CONTROL
ROTATION DET
IC2901-1, 2, 17 REC
8.0Vp-p (2msec/div)
(TO CYLINDER MOTER)
VM
M3
M2
M1
GND
HE-
HE+
VH
TH2901
VRH0017
(TO CYLINDER HEAD)
P2901
SP L
SP COM
SP R
LP L
LP COM
LP R
GND
A HEAD L
A HEAD COM
A HEAD R
FLY ERASE
GND (FLY E.)
TO HEAD AMP P502
(Page 4-62/A-1)
CYLINDER DRIVE C.B.A. (VEX0126)
IC1502
ON1387
IC1501
ON1387
(S REEL)
(T REEL)
SAFETY TAB
SW1501
VES0695
SW1502
VES0176
S-VHS CASSETTE SW
MODE SELECT SW
P1504
SW3
SW1
SW2
GND
Q1502
PN205L
(S PHOTO)
D1501
LN59L
SENSOR
Q1501
PN205L
(T PHOTO)
P1505
P6001
SAFETY TAB
LOAD MOTOR (-)
LOAD MOTOR (+)
REEL PULSE (T)
PHOTO SNS +B
REEL PULSE (S)
SENSOR LED
S PHOTO
POSI. SW3
POSI. SW1
POSI. SW2
GND (SNS)
T PHOTO
VHS CAS
P1503
MECHANISM CONNECTION C.B.A.
LOADING MOTOR
P1508
LOADING MOTOR C. B. A.
C2009 100P
L2002 VLQ 0556
C2006 50V0.47
TO AUDIO SECTION (Page 4-14/E-9)
LP
LEVEL DOWN
MODE SEL
AUDIO MUTE
FM MUTE
NORMAL REC
SAFETY TAB
L CH
R CH
TRACKING ENV
S VHS CAS
NTSC
INSERT
MIX
FULL ERASE
POWER OFF
CTL HEAD (-)
CTL HEAD (+)
D.A. REC
A.H SW
METER (L)
METER (R)
REEL +B
A.DUB
AI TRIG
TRICK
NON SW 5.3V
UNREG 14V
REG 12.3V
S.NON SW 5V
POWER OFF
TUNER OFF
AV VTR
EDIT CTL
VPS VIDEO IN
OSD DATA
OSD CLOCK
OSD CS
AI END
AI TRIG
REC WIDE
FLY ERASE
D.FM REC
COLOUR
OSD ON
AI CNT
ENV SELECT
V.EE
EX.REC
D.REC
TRICKING ENV
S-VHS CAS
HEAD AMP SW
HEAD SW
TRICK
NTSC
LP
WIDE
ART V SYNC
VSS
TEST SIG
EDIT
ROTARY SW
BILINGUAL
STEREO
AFC S CURVE
SYNC
FS CS
TIMER BUS TLK
FS CLOCK
IO CS
T.NON SW 5V
OSD SECAM
COLOUR BACK
EE
S-VHS SW ON
AV3 S-VHS IN
S-VHS
TIMER BUS CLK
VITC DATA OUT
VITC DATA IN
VITC CLOCK
GND
GND (DC-DC)
GND (CYL)
GND (CAP)
GND (SENSOR)
TO LUMINANCE & CHROMINANCE SECTION (Page 4-17/G-22)
Q6004
MSD601
Q6003
2SD1915F
Q6008
2SD1991
LEVEL METER
QR6003
MRN2402
QR6002
MRN2402
QR6013
MRN1403
D6003 1SS254
D6013 MA723
D6002 MA723
D6011 AK04-V2
D6012 11EQS04
L2001 VLQ0569
L6001 VLP0063
L6003 VLP0063
IC6003
MN1280S
OUTPUT CIRCUIT
POWER VOLTAGE DET
Q6009
XN1213
IC6001
MN6755320H2D
TV/VTR
FM MUTE
A MUTE
A SEL
V EE
NOR REC
A DUB / PS
V CHANGE
LM LIMIT
FF/REW
UNLOADING
LOADING
JUST CLOCK ON
AI ON
5V
L CH
R CH
10 HEAD
ATIC SEL
S TAB
SLOW / SERCH
AI CNT
AI END
GND(D)
RESET
EXI
TC31
IROO
VISS PLAY
EX.REC
REC
TRICK
POWER OFF
AI TRIG
REC WIDE
A DUB
INSERT
AI LED
LINE A MODE
A
B
C
D
E
F
G
1
2
3
4
5
6
7
8
9
10
11
12

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE


CAPSTAN SERVO SPEED LOOP
CAPSTAN SERVO PHASE LOOP
CYL
IC6001
MN6755320H2D
IC6008
TL431CLP
IC2001
AN3727S
QR6015
MRN2402
QR2002
MRN2404
IC2002
μPD4053BQ
Q2002
MSB709
(AMP)
IC6007
M6M80041AP
QR2001
XN1213
Q2001
MSB709
IC6005
μPD4052BQ
IC6002
M38624V1BK
QR6004
MRN1402
QR6012
MRN1404
Q6005
MSD601
Q6006
MSD601
X6002
EFOEC7374A4E
(7.37MHz)
X6001
VSX0563
DECODER
LOGIC
12
13
14
15
16
17
18
19
20
21
22
23
24

- - - - CYLINDER SERVO SPEED LOOP — — — CYLINDER SERVO PHASE LOOP


PP2001
1 LOAD MOTOR (−)
2 LOAD MOTOR (+)
3 LOADING Ⓗ
4 UNLOADING Ⓗ
5 LIMIT Ⓗ
6 V-CHANGE Ⓛ
7 FF / REW Ⓛ
8 CAP FG1
9 GND(FG)
10 CAP FG2
11 COMPARATOR IN
12 COMPARATOR OUT
TO PS2001 (Page 4-25/E-3)
PP2002
1 CAP ET
2 CURRENT LIMIT
3 S NON SW 5V
4 CAP R/S/F
5 REG 12.3V
6 SYS 1/2 VDD
7 S REG 5V
8 UNREG 14V
9 GND (MOTOR)
10 GND
TO PS2002 (Page 4-25/D-3)
CAPSTAN DRIVE PACK C.B.A. (VEP02412B)
PP7406
1 GND
2 VIDEO
3 T NON SW 5V
4 BACK UP 5V
5 RESET Ⓛ
6 TUNER OFF Ⓗ
7 TIMER BUS CLK
8 TIMER BUS TLK
9 TIMER BUS LSN
10 GND
TO PS1 (Page 4-67/C-1)
VPS PACK C.B.A. (VEP07538J)
P7401
1 GND P7501-20
2 RESET Ⓛ P7501-19
3 TIMER BUS TLK P7501-18
4 TIMER BUS LSN P7501-17
5 TIMER BUS CLK P7501-16
6 S DATA P7501-15
7 S CLOCK P7501-14
8 BUZZER P7501-13
9 IO CS P7501-12
10 FS CS P7501-11
11 GND P7501-10
12 P7501-9
13 FS CLOCK P7501-8
14 SYNC Ⓛ P7501-7
15 EDIT SW P7501-6
16 MIX Ⓗ P7501-5
17 AFC S CURVE P7501-4
18 GND P7501-3
19 BACK UP 5V P7501-2
20 T NON SW 5V P7501-1
TO TIMER P7501 (Page 4-74/B-1)
P7402
1 UNREG 14V P7502-20
2 GND (DC-DC) P7502-19
3 R CH Ⓗ P7502-18
4 L CH Ⓗ P7502-17
5 METER (R) P7502-16
6 METER (L) P7502-15
7 GND P7502-14
8 LEVEL METER 5V P7502-13
9 P7502-12
10 STEREO Ⓛ P7502-11
11 BILINGUAL Ⓛ P7502-10
12 P7502-9
13 P7502-8
14 COLOUR Ⓗ P7502-7
15 AT Ⓗ P7502-6
16 P7502-5
17 S-VHS Ⓗ P7502-4
18 TBC SW ON Ⓗ P7502-3
19 AV3 S-VHS IN Ⓗ P7502-2
20 S-VHS SW ON Ⓗ P7502-1
TO TIMER P7502 (Page 4-74/G-1)
P6004
1 HEAD SW
2 HEAD AMP SW OUT
3 HEAD AMP SW IN
4 TBC SW ON Ⓗ
5 TBC Ⓛ
6 TBC TRICK Ⓛ
7 TBC SEARCH Ⓛ
8 EE Ⓗ
TO TBC P9002 (Page 4-46/E-22)
P6003
1 NON SW 5V
2 PREROLL Ⓗ
3 EDIT TRIG Ⓛ
4 SP CLOCK
5 SP DATA
6 GND
TO TIMER P7504 (Page 4-74/B-20)
A14 A50 A51 A54 A8 A7 A40 A41 A43 A44 A56 A55 A60 A61 A59 B58 B57 A57 A47 A6 A21 A22 B44 B37 B34 B36 B33 A26 B32 A36 A37 A23 A24 B31 B30 B18 A39 B43 B42 B41 B60 B22 B61 B64 B63 B62 B40 A45 A48 B39 B38 B27 B15 B14 B62 B63 B64 B28
C6001 0.01
R6001 10K
Q6001 2SD1991A (SENSOR LED REG)
R6002 2700
R6003 2700
Q6002 MSB709 (SENSOR LED DRIVE)
R6004 200
D6001 1SS254
TEST TP6010
C6056 0.01
R6017 22K
R6021 10K
TP6011 SERVICE
R6020 10K
C6055 0.01
R6016 10K
R6018 10K
R6019 22K
D6009 AK04V2
C2001 16V47
R6100 47K
R6050 47K
C6040 0.01
C6041 6V100
R6006 10K
X7001 VSQ0565
C6007 M50041AP
VDD BUSY RESET VSS
CS CLK DI DO
R6068 3300
L6008 VLP0083
QR6014 MRN1404 (RESET Ⓛ OFF)
47K
QR6001 MRN1402 (BUZZER DRIVE)
10K
TL51 TL97 TL50 TL13 TL48 TL98 TL99
R6032 270
R6033 270
R6074 1K
R6029 18K
D6008 MA151WA
D6007 MA151WK
D6006 MA151WA
D6005 MA151WK
R6118 10K
R6116 10K
R6114 10K
R6112 47K
R6110 10K
R6113 4700 (EXCEPT VITC)
R6094 47K
R6031 4700
R6099 8200
BUS SELECT (A) 48
BUS SELECT (B) 47
LANGUAGE 0 40
LANGUAGE 1 39
LANGUAGE 2 38
VITC OK Ⓗ 37
SERCH MUTE OK Ⓗ 36
INSIDE Ⓗ 35
OSD SECAM Ⓗ 34
TEST SIG Ⓗ 33
60 TEL DATA IN
59 GND
58 5V
57 5V
49 CHECK
21 SP CLOCK
22 OSC IN
23 OSC OUT
24 GND
25 JOG LED Ⓗ
26 EDIT 12P
27 AV VTR Ⓛ
28 TBC SERCH Ⓛ
29 TBC TRICK Ⓛ
30 TBC ON Ⓛ
32 EDIT Ⓗ
24 25 26 27 28 29

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

SYSTEM CONTROL & SERVO ICs DC VOLTAGE CHART (SP MODE)

IC2001

REF. NO. / MODE	1	2	3	4	5	6	7	8												
STOP	0	5.0	0	0	0	5.0	0	5.0												
PLAY	0	5.0	0	0	0	5.0	0	5.0												
REC	0	4.9	0	0	0	5.0	0	5.0												
F.F	0	5.0	0	0	0	5.0	0	5.0												
REW	5.0	0	0	0	0	5.0	5.0	5.0												

IC2002

REF. NO. / MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
STOP	2.5	2.3	1.4	1.4	1.0	0	0	0	5.0	0	0	2.6	0	2.6	2.3	5.2				
PLAY	2.6	2.3	2.6	2.6	2.0	0	0	0	5.0	0	0	2.5	0	2.5	2.3	5.2				
REC	2.5	2.3	1.1	1.1	0.6	0	0	0	5.0	0	0	2.6	0	2.6	2.3	5.2				
F.F	2.5	2.3	1.6	1.6	1.0	0	0	0	5.0	0	0	2.6	0	2.6	2.3	5.2				
REW	2.5	2.3	1.2	1.2	0.6	0	0	0	5.0	0	0	2.6	0	2.6	2.3	5.2				

IC2901

REF. NO. / MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
STOP	14.8	14.6	0.1	1.2	0.1	2.6	2.5	2.6	2.5	2.7	5.2	3.8	3.9	3.8	1.2	14.4	14.6	0.1		
PLAY	14.5	13.9	0.1	1.1	0.1	2.6	2.5	2.6	2.5	2.8	5.2	3.9	3.9	3.8	1.5	14.3	14.4	0.1		
REC	14.8	14.7	0.1	1.2	0.1	2.6	2.5	2.6	2.5	2.8	5.2	3.9	3.9	3.9	1.4	14.3	14.4	0.1		
F.F	14.1	13.8	0.1	1.1	0.1	2.6	2.5	2.6	2.5	2.8	5.2	3.9	3.8	3.8	1.5	14.3	13.7	0.1		
REW	14.5	13.5	0.1	1.1	0.1	2.6	2.5	2.6	2.5	2.8	5.2	3.8	3.8	3.9	1.5	14.3	14.5	0.1		

IC6001

REF. NO. / MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	0.1	0	5.0	0.1	5.0	5.0	4.9	0.1	4.9	0	0	5.0	4.9	5.0	0	0	0	0	0
PLAY	0	0.1	0	5.0	5.0	5.0	5.0	4.9	0.1	4.9	0	0	5.0	4.9	5.0	0	0	0	0	0
REC	0	0.1	0	5.0	0.1	0	5.0	4.9	0.1	4.9	0	0	5.0	4.9	5.0	0	0	0	0	0
F.F	0	0.1	0	5.0	0.1	5.0	5.0	0	0.1	0	0	0	5.0	4.9	5.0	0	0	0	0	0
REW	0	0.1	0	5.0	0.1	5.0	5.0	0	0.1	0	0	0	5.0	4.9	5.0	0	0	0	0	0

IC6001

REF. NO. / MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	5.0	0.1	5.0	0	5.0	0	0	0	0	0	0	0	0	5.0	5.0	0	2.7	2.7	0	5.0
PLAY	5.0	0.1	0.2	0	5.0	0	0	0	0	4.9	5.0	0	0	5.0	5.0	0	2.7	2.7	0	5.0
REC	5.0	0.1	5.0	0	5.0	0	0	0	0	0	0	0	0	5.0	5.0	0	2.7	2.7	0	5.0
F.F	5.0	0.1	5.0	0	5.0	0	0	0	0	0	0	0	0	5.0	5.0	0	2.7	2.7	0	5.0
REW	5.0	0.1	5.0	0	5.0	0	0	0	0	0	0	0	0	5.0	5.0	0	2.7	2.7	0	5.0

IC6001

REF. NO. / MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	0	0	0	0	0	0.1	0	0	5.0	0	1.8	0.9	4.5	4.8	5.0	4.8	2.0	0	2.6	2.5
PLAY	0	0	0	0	0	0.1	0	0	5.0	3.7	1.7	0.9	4.5	4.8	5.0	4.8	0	5.0	2.7	2.5
REC	0	0	0	5.0	5.0	5.0	5.0	0	5.0	0	1.7	0.9	4.5	4.8	5.0	4.8	0	5.0	2.6	2.5
F.F	0	0	0	0	0	0.1	0	0	5.0	0	1.7	0.8	4.5	4.8	5.0	4.8	0	5.0	5.0	2.5
REW	0	0	0	0	0	0.1	0	0	5.0	0	1.7	0.9	4.5	4.8	5.0	4.8	5.0	5.0	5.0	2.5

IC6001

REF. NO. / MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	0	5.0	5.0	0	4.0	5.0	2.5	0.3	3.5	5.0	0	2.5	2.5	1.5	0	0	2.5	2.5	2.4	2.6
PLAY	0	3.7	5.0	0	4.0	5.0	2.5	0.3	3.7	5.0	5.0	2.5	2.5	1.5	0	0	2.5	2.5	3.0	2.5
REC	0	5.0	5.0	0	4.5	5.0	2.5	0.3	3.8	5.0	5.0	2.5	2.5	1.5	0	0	2.5	2.5	2.4	2.6
F.F	0	5.0	5.0	0	2.4	5.0	2.5	0.3	3.7	2.5	2.9	2.5	2.5	1.2	0	0	2.5	2.5	2.5	2.6
REW	0	4.0	3.6	0	2.5	5.0	2.5	0.3	3.7	2.7	2.5	2.5	2.5	1.3	0	0	2.5	2.5	2.5	2.6

IC6001

REF. NO. / MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
STOP	4.9	0	0	0	2.5	2.5	0	2.7	2.5	5.0	1.4	2.5	5.0	3.5	5.0	5.0	5.0	3.5	0	3.5
PLAY	5.0	0	0	0	2.5	2.5	0	3.0	2.5	5.0	2.5	2.5	5.0	4.1	5.0	5.0	5.0	3.5	0	3.5
REC	4.9	3.7	3.9	0	2.5	2.5	0	2.7	2.5	5.0	2.7	2.5	5.0	4.1	4.8	5.0	5.0	3.5	0	3.5
F.F	5.0	0	0	0	2.5	2.5	0	3.1	2.5	5.0	2.3	2.5	5.0	4.4	4.9	5.0	5.0	3.5	0	3.5
REW	5.0	0	0	0	2.5	2.5	0	3.1	2.5	5.0	2.4	2.5	5.0	4.4	4.9	5.0	5.0	3.5	0	3.5

IC6001

REF. NO. / MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
STOP	3.5	5.0	2.3	0	1.6	0	5.0	5.0	5.0	0	5.0	0	4.5	5.0	0	0	5.0	5.0	0	0
PLAY	3.5	5.0	2.6	0	2.7	0	5.0	0.2	5.0	0	5.0	0	4.5	5.0	0	0	5.0	5.0	0	0
REC	3.5	5.0	2.6	0	1.2	0	5.0	0.2	5.0	0	5.0	0	4.5	5.0	0	0	5.0	5.0	0	0
F.F	3.5	5.0	2.6	0	1.2	0	5.0	0.2	5.0	0	5.0	0	4.5	5.0	0	5.0	5.0	5.0	0	0
REW	3.5	5.0	2.3	0	1.2	0	5.0	0.2	5.0	5.0	5.0	0	4.5	5.0	0	5.0	5.0	5.0	0	0

IC6001

REF. NO. / MODE	121	122	123	124																
STOP	0	0	0	5.0																
PLAY	0	0	0	5.0																
REC	0	0	0	5.0																
F.F	0	0	0	5.0																
REW	0	0	0	5.0																

REF. NO.	IC6002																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	4.8	4.7	4.6	0	0	0	5.0	0	4.5	0.9	0.9	0	4.8	3.1	4.7	0	0	0	4.9	5.0
PLAY	4.8	4.7	4.6	0	0	0	5.0	0	4.5	1.0	1.0	0	4.8	3.1	4.7	0	0	0	4.9	5.0
REC	4.8	4.7	4.6	0	0	0	5.0	0	4.5	1.0	1.0	0	4.8	3.1	4.7	0	0	0	4.9	5.0
F.F	4.8	4.7	4.6	0	0	0	5.0	0	4.5	1.0	1.0	0	4.8	3.1	4.7	0	0	0	4.9	5.0
REW	4.8	4.7	4.6	0	0	0	5.0	0	4.5	1.0	1.0	0	4.8	3.1	4.7	0	0	0	4.9	5.0
REF. NO.	IC6002																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	5.0	2.2	2.4	0	0	0	5.0	5.0	5.0	5.0	0	0	0	0.2	0	0	4.5	0	0	0
PLAY	5.0	2.2	2.4	0	0	0	0	5.0	5.0	0	0	0	0	0.2	0	0	4.5	0	0	0
REC	5.0	2.2	2.4	0	0	0	0	5.0	5.0	5.0	0	0	0	0.2	0	0	4.5	0	0	0
F.F	5.0	2.2	2.4	0	0	0	0	5.0	5.0	5.0	0	0	0	0.2	0	0	4.5	0	0	0
REW	5.0	2.2	2.4	0	0	0	0	5.0	5.0	5.0	0	0	0	0.2	0	0	4.5	0	0	0
REF. NO.	IC6002																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	0	0	0	0	0	0	5.0	0	5.0	0	0	0	0	0	0	0	5.0	5.0	0	5.0
PLAY	0	0	0	0	0	0	5.0	0	5.0	0	0	0	0	0	0	0	5.0	5.0	0	5.0
REC	0	0	0	0	0	0	5.0	0	5.0	0	0	0	0	0	0	0	5.0	5.0	0	5.0
F.F	0	0	0	0	0	0	5.0	0	5.0	0	0	0	0	0	0	0	5.0	5.0	0	5.0
REW	0	0	0	0	0	0	5.0	0	5.0	0	0	0	0	0	0	0	5.0	5.0	0	5.0
REF. NO.	IC6002																			
MODE	61	62	63	64																
STOP	0.1	5.0	5.0	5.0																
PLAY	0.1	5.0	5.0	5.0																
REC	0.1	5.0	5.0	5.0																
F.F	0.1	5.0	5.0	5.0																
REW	0.1	5.0	5.0	5.0																
REF. NO.	IC6003																			
MODE	1	2	3																	
STOP	5.0	5.0	0																	
PLAY	5.0	5.0	0																	
REC	5.0	5.0	0																	
F.F	5.0	5.0	0																	
REW	5.0	5.0	0																	
REF. NO.	IC6005																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
STOP	5.0	4.8	4.8	4.3	5.0	0	0	0	5.0	0	5.0	5.0	4.6	5.0	4.6	5.0				
PLAY	5.0	4.8	4.8	4.3	5.0	0	0	0	5.0	0	5.0	5.0	4.7	5.0	4.6	5.0				
REC	5.0	4.8	4.8	4.3	5.0	0	0	0	5.0	0	5.0	5.0	4.7	5.0	4.6	5.0				
F.F	5.0	4.8	4.8	4.3	5.0	0	0	0	5.0	0	5.0	5.0	4.7	5.0	4.7	5.0				
REW	5.0	4.8	4.8	4.3	5.0	0	0	0	5.0	0	5.0	5.0	4.7	5.0	4.7	5.0				
REF. NO.	IC6007										IC6008									
MODE	1	2	3	4	5	6	7	8			1	2	3							
STOP	5.0	5.0	0.1	5.0	0	0	5.0	5.0			2.3	0	2.9							
PLAY	5.0	5.0	0.1	5.0	0	0	5.0	5.0			2.3	0	2.9							
REC	5.0	5.0	0.1	5.0	0	0	5.0	5.0			2.3	0	2.9							
F.F	5.0	5.0	0.1	5.0	0	0	5.0	5.0			2.3	0	2.9							
REW	5.0	5.0	0.1	5.0	0	0	5.0	5.0			2.3	0	2.9							

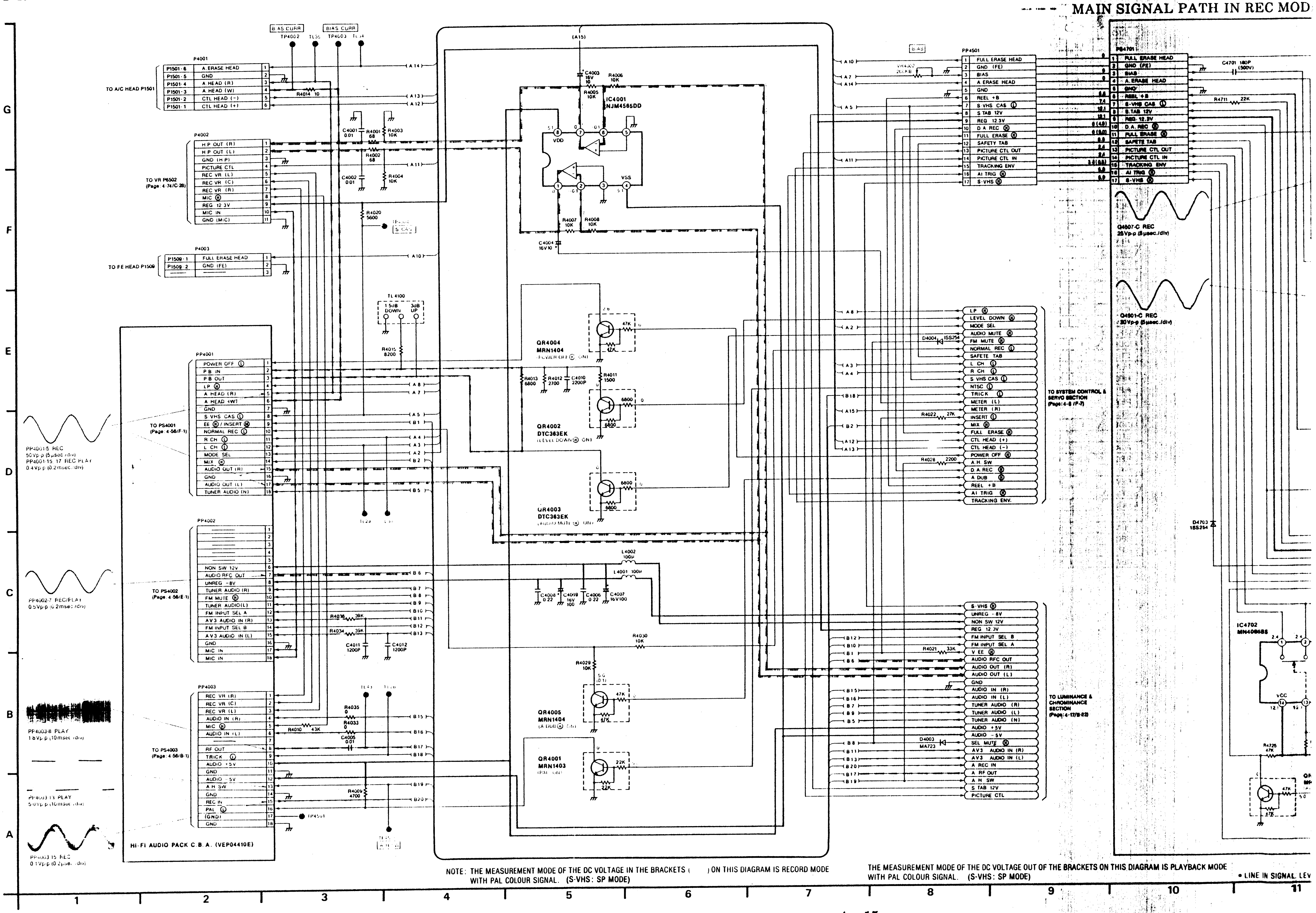
SYSTEM CONTROL & SERVO TRANSISTORs DC VOLTAGE CHART (SP MODE)

REF. NO.	Q2001			Q2002			Q6001			Q6002			Q6003			Q6004		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	5.0	4.8	5.0	1.6	0	1.0	5.1	14.4	5.6	5.1	−0.2	5.0	5.2	5.4	5.9	5.0	5.0	5.7
PLAY	5.0	4.8	5.0	2.6	0	2.0	5.0	14.4	5.6	5.0	4.8	4.2	5.2	5.4	5.9	5.0	5.0	5.7
REC	5.0	4.8	4.9	1.1	0	0.5	4.9	14.3	5.6	4.9	4.8	4.2	5.2	5.4	5.9	5.0	5.0	5.5
F.F	5.0	4.8	5.0	1.1	0	1.1	5.0	14.3	5.6	5.0	4.9	4.2	5.2	5.4	5.9	5.0	5.0	5.7
REW	5.0	4.8	5.0	1.1	0	0.5	5.0	14.3	5.6	5.0	4.8	4.2	5.2	5.4	5.9	5.0	5.0	5.7
REF. NO.	Q6005			Q6006			Q6008											
MODE	E	C	B	E	C	B	E	C	B									
STOP	0	4.9	0.1	0	4.7	0.1	5.0	5.1	5.8									
PLAY	0	4.9	0.1	0	4.7	0.1	5.0	5.1	5.8									
REC	0	4.9	0.1	0	4.7	0.1	5.0	5.1	5.8									
F.F	0	4.8	0.1	0	4.7	0.1	5.0	5.1	5.8									
REW	0	4.8	0.1	0	4.7	0.1	5.0	5.1	5.8									
REF. NO.	QR2001						QR2002			QR6001			QR6002			QR6003		
MODE	1	2	3	4	5		E	C	B	E	C	B	E	C	B	E	C	B
STOP	0	0	4.9	0	4.9		5.0	0	5.0	0	0	5.0	5.0	5.0	0	5.0	5.0	0
PLAY	0	0	4.9	0	4.9		5.0	0	5.0	0	0	5.0	5.0	5.0	0	5.0	5.0	0
REC	0	0	4.9	0	4.9		5.0	0	5.0	0	0	5.0	5.0	5.0	0	5.0	5.0	0
F.F	0	1.0	0	0	0		5.0	0	5.0	0	0	5.0	5.0	5.0	0	5.0	5.0	0
REW	0	1.0	0	0	0		5.0	0	5.0	0	0	5.0	5.0	5.0	0	5.0	5.0	0
REF. NO.	QR6004			QR6009						QR6012			QR6013			QR6014		
MODE	E	C	B	1	2	3	4	5		E	C	B	E	C	B	E	C	B
STOP	0	0.9	1.7	5.1	0	0	0	0		0	0.1	4.3	0	0	7.0	0	0	4.9
PLAY	0	0.9	1.7	0.5	0	0	0	0		0	0.1	4.3	0	0	7.0	0	0	4.9
REC	0	1.0	1.7	5.1	0	0	0	0		0	0.1	4.3	0	0	7.0	0	0	4.9
F.F	0	1.0	1.7	5.1	0	0	0	0		0	0.1	4.3	0	0	7.0	0	0	4.9
REW	0	0.9	1.7	5.1	0	0	0	0		0	0.1	4.3	0	0	7.0	0	0	4.9
REF. NO.	QR6015																	
MODE	E	C	B															
STOP	5.2	0.3	5.0															
PLAY	5.2	0.3	5.0															
REC	5.2	0.3	5.0															
F.F	5.2	0.3	5.0															
REW	5.2	0.3	5.0															

INPUT/OUTPUT CHART FOR IC6002 (M38024V1BK)

PIN NO.	I/O	PORT NAME	PIN NO.	I/O	PORT NAME	PIN NO.	I/O	PORT NAME
1	O	OSD CLK	20	I	L CLK	37	I	VITC OK (H)
2	O	OSD DATA	21	I	5P CLK	38	I	LANGUAGE 2
3	O	OSD CS	22	I	OSC IN	39	I	LANGUAGE 1
4	O	OSD ON (H)	23	O	OSC OUT	40	I	LANGUAGE 0
5, 6	–	—	24	–	GND	41-46	–	—
7	I	L CLK CNT	25	O	JOG LED (H)	47	O	BUS SELECT (B)
8	–	—	26	O	EDIT 21P	48	O	BUS SELECT (A)
9	I	SYS CLK	27	O	AV VTR (L)	49	I	CHECK (L)
10	O	SYS OUT	28	O	TBC SEARCH Ⓛ	50-56	–	—
11	I	SYS IN	29	O	TBC TRICK Ⓛ	57, 58	I	VDD
12	O	DATA INH	30	O	TBC ON Ⓛ	59	–	GND
13	I	CLK INPUT	31	–	—	60	I	EE DATA IN
14	O	DATA OUT	32	O	EDIT (H)	61	O	EE DATA OUT
15	I	DATA IN	33	I	TEST SIGNAL (H)	62	O	EE CLK
16, 17	–	—	34	I	OSD SECAM (H)	63	O	EE CS
18	–	GND	35	O	INSIDE (H)	64	I	REC/P1/P2
19	I	RESET (L)	36	I	SERCH MUTE OK (H)			

4-4. AUDIO SECTION IN MAIN & SUB AUDIO PACK SCHEMATIC DIAGRAM

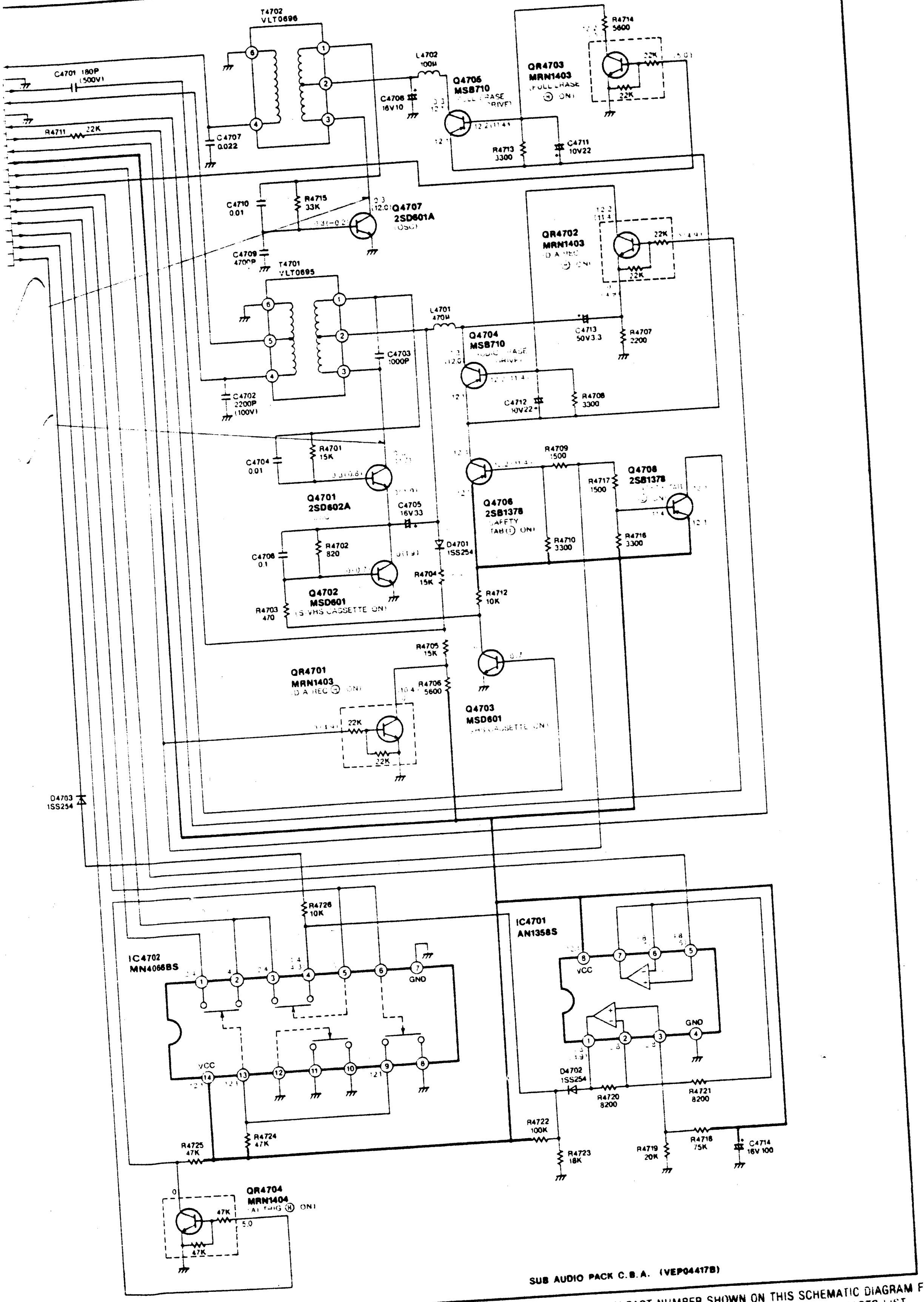

MAIN SIGNAL PATH IN REC MOD
BIAS CURR
TP4002
TP4003
P4001
TO A/C HEAD P1501
A ERASE HEAD
GND
A HEAD (R)
A HEAD (W)
CTL HEAD (-)
CTL HEAD (+)
R4014 10
P4002
TO VR P6502 (Page 4-74/C-28)
H P OUT (R)
H P OUT (L)
GND (H P)
PICTURE CTL
REC VR (L)
REC VR (C)
REC VR (R)
MIC
REG 12 3V
MIC IN
GND (MIC)
P4003
TO FE HEAD P1509
FULL ERASE HEAD
GND (FE)
C4001 0.01
R4001 68
R4003 10K
R4002 68
C4002 0.01
R4004 10K
R4020 5600
TL4100
1.5dB DOWN
3dB UP
R4015 8200
C4003 16V 10
R4006 10K
R4005 10K
IC4001 NJM4565DD
VDD
VSS
R4007 10K
R4008 10K
C4004 16V 10
QR4004 MRN1404
QR4002 DTC363EK
QR4003 DTC363EK
R4013 6800
R4012 2700
C4010 2200P
R4011 1500
L4002 100μ
L4001 100μ
C4008 0.22
C4009 16V 100
C4006 0.22
C4007 16V 100
R4030 10K
R4029 10K
QR4005 MRN1404
QR4001 MRN1403
PP4001
TO PS4001 (Page 4-56/F-1)
POWER OFF
P B IN
P B OUT
LP
A HEAD (R)
A HEAD (W)
GND
S VHS CAS
EE / INSERT
NORMAL REC
R CH
L CH
MODE SEL
MIX
AUDIO OUT (R)
GND
AUDIO OUT (L)
TUNER AUDIO (IN)
PP4002
TO PS4002 (Page 4-56/E-1)
NON SW 12V
AUDIO RFC OUT
UNREG -8V
TUNER AUDIO (R)
FM MUTE
TUNER AUDIO (L)
FM INPUT SEL A
AV3 AUDIO IN (R)
FM INPUT SEL B
AV3 AUDIO IN (L)
GND
MIC IN
MIC IN
R4036 39K
R4034 39K
C4011 1200P
C4012 1200P
PP4003
TO PS4003 (Page 4-56/B-1)
REC VR (R)
REC VR (C)
REC VR (L)
AUDIO IN (R)
MIC
AUDIO IN (L)
RF OUT
TRICK
AUDIO +5V
GND
AUDIO -5V
A H SW
GND
REC IN
PAL
(GND)
GND
R4035 0
R4033 0
R4010 43K
C4005 0.01
R4009 4700
TP4501
HI-FI AUDIO PACK C.B.A. (VEP04410E)
PP4001-5 REC 50Vp-p (5μsec/div)
PP4001-15, 17 REC PLAY 0.4Vp-p (0.2msec/div)
PP4002-7 REC/PLAY 0.5Vp-p (0.2msec/div)
PP4003-8 PLAY 1.8Vp-p (10msec/div)
PP4003-13 PLAY 5.0Vp-p (10msec/div)
PP4003-15 REC 0.1Vp-p (0.2μsec/div)
PP4501
FULL ERASE HEAD
GND (FE)
BIAS
A ERASE HEAD
GND
REEL +B
S VHS CAS
S TAB 12V
REG 12.3V
D A REC
FULL ERASE
SAFETY TAB
PICTURE CTL OUT
PICTURE CTL IN
TRACKING ENV
AI TRIG
S-VHS
P4701
C4701 180P (500V)
R4711 22K
Q4507-C REC 25Vp-p (5μsec/div)
Q4501-C REC 20Vp-p (5μsec/div)
LP
LEVEL DOWN
MODE SEL
AUDIO MUTE
FM MUTE
NORMAL REC
SAFETE TAB
L CH
R CH
S VHS CAS
NTSC
TRICK
METER (L)
METER (R)
INSERT
MIX
FULL ERASE
CTL HEAD (+)
CTL HEAD (-)
POWER OFF
A.H. SW
D.A.REC
A DUB
REEL +B
AI TRIG
TRACKING ENV.
D4004 1SS254
R4022 27K
R4028 2200
TO SYSTEM CONTROL & SERVO SECTION (Page 4-8/F-7)
D4703 1SS254
S-VHS
UNREG -8V
NON SW 12V
REG 12.3V
FM INPUT SEL B
FM INPUT SEL A
V EE
AUDIO RFC OUT
AUDIO OUT (R)
AUDIO OUT (L)
GND
AUDIO IN (R)
AUDIO IN (L)
TUNER AUDIO (R)
TUNER AUDIO (L)
TUNER AUDIO (N)
AUDIO +5V
AUDIO -5V
SEL MUTE
AV3 AUDIO IN (R)
AV3 AUDIO IN (L)
A REC IN
A RF OUT
A H SW
S TAB 12V
PICTURE CTL
R4021 33K
D4003 MA723
TO LUMINANCE & CHROMINANCE SECTION (Page 4-17/B-22)
IC4702 MN4066BS
VCC
R4725 47K
A
B
C
D
E
F
G
1
2
3
4
5
6
7
8
9
10
11

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

• LINE IN SIGNAL LEV

ATH IN REC MODE   - - - MAIN SIGNAL PATH IN PLAYBACK MODE


T4702
VLT0696
C4701 180P (500V)
R4711 22K
C4707 0.022
L4702 100µ
C4706 16V10
Q4705
MSB710
(FULL ERASE DRIVE)
R4713 3300
C4711 10V22
R4714 5600
QR4703
MRN1403
(FULL ERASE ⓗ ON)
22K
22K
C4710 0.01
R4715 33K
Q4707
2SD601A
(OSC)
C4709 4700P
T4701
VLT0695
QR4702
MRN1403
(D.A. REC ⓗ ON)
22K
22K
L4701 470µ
C4713 50V3.3
R4707 2200
Q4704
MSB710
(AUDIO ERASE DRIVE)
C4703 1000P
C4702 2200P (100V)
C4712 10V22
R4708 3300
R4701 15K
C4704 0.01
Q4701
2SD602A
C4705 16V33
R4709 1500
R4717 1500
Q4708
2SB1378
Q4706
2SB1378
(SAFETY TAB ⓛ ON)
R4710 3300
R4716 3300
C4708 0.1
R4702 820
D4701 1SS254
Q4702
MSD601
(S-VHS CASSETTE ON)
R4704 15K
R4703 470
R4712 10K
R4705 15K
QR4701
MRN1403
(D.A. REC ⓛ ON)
R4706 5600
22K
22K
Q4703
MSD601
(VHS CASSETTE ON)
D4703 1SS254
R4726 10K
IC4702
MN4066BS
GND
VCC
IC4701
AN1358S
VCC
GND
D4702 1SS254
R4720 8200
R4721 8200
R4722 100K
R4723 18K
R4719 20K
R4718 75K
C4714 16V 100
R4724 47K
R4725 47K
QR4704
MRN1404
(AL TRIG ⓗ ON)
47K
47K
5.0

SUB AUDIO PACK C.B.A. (VEP04417B)

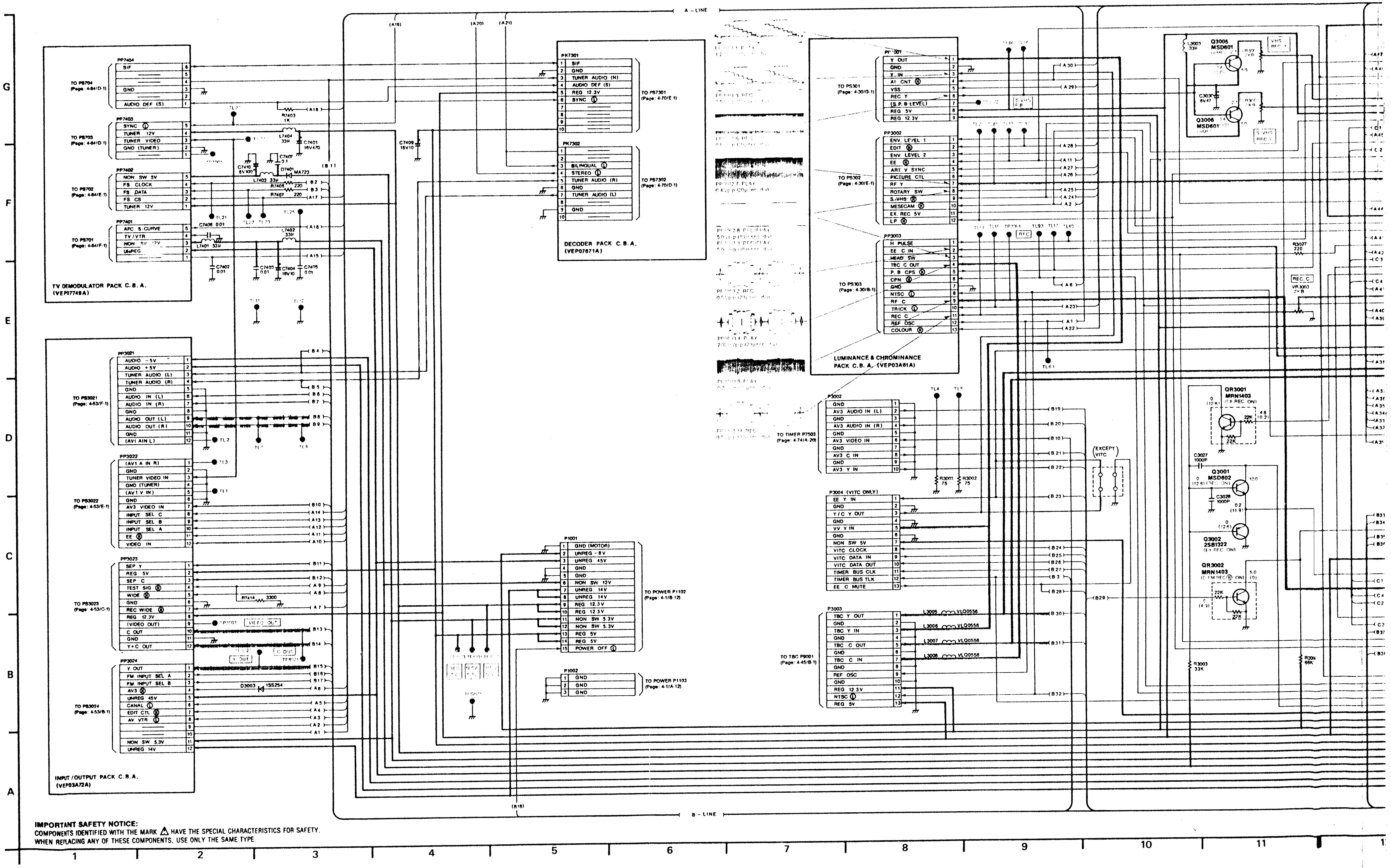
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

IS PLAYBACK MODE

• LINE IN SIGNAL LEVEL... −10dB 1kHz

10 | 11 | 12 | 13 | 14

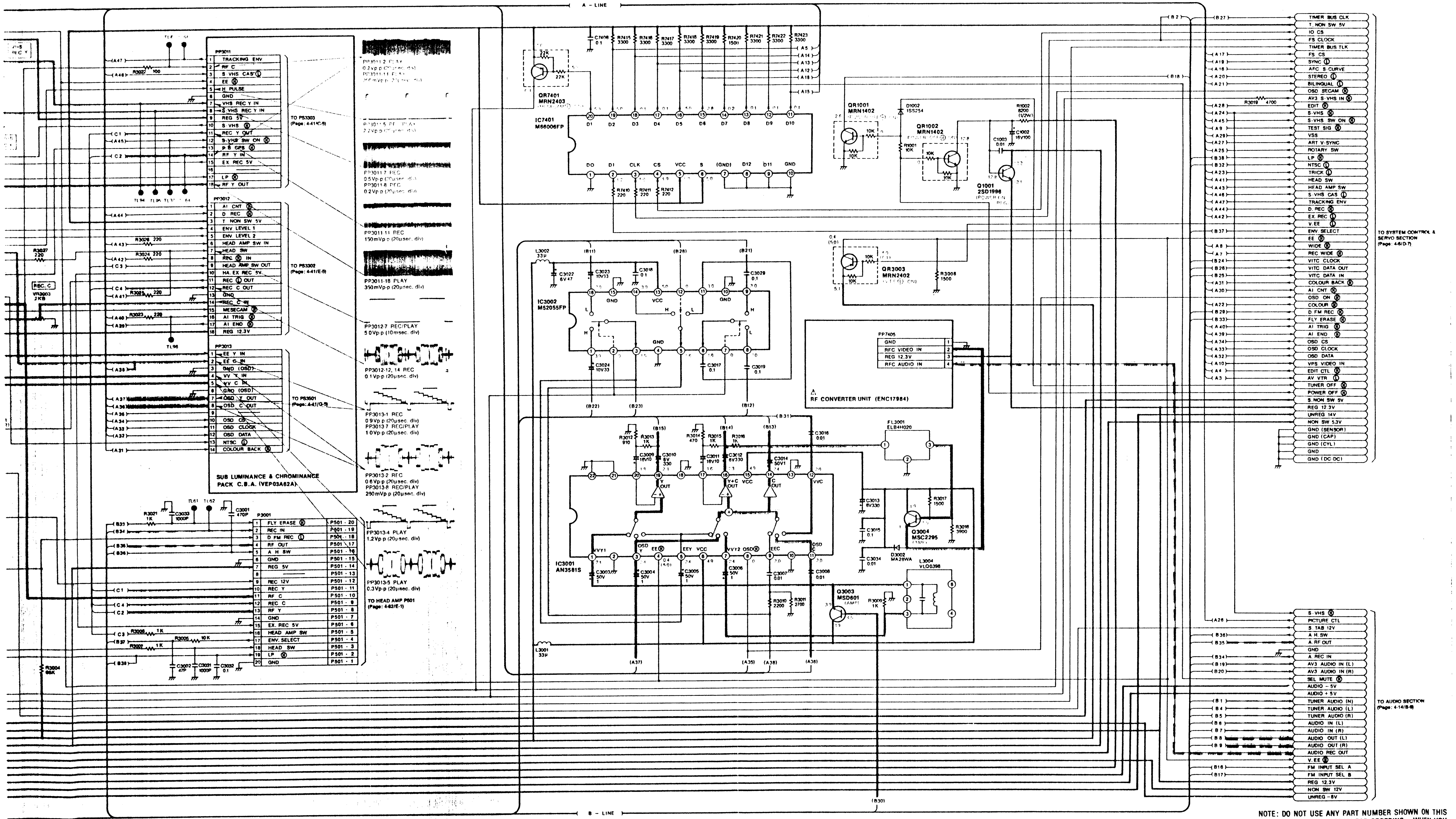
4-5. LUMINANCE & CHROMINANCE SECTION IN MAIN SCHEMATIC DIAGRAM


A - LINE
B - LINE
TV DEMODULATOR PACK C.B.A. (VEP07749A)
PP7404
SIF
GND
AUDIO DEF (S)
TO P8704 (Page: 4-84/D-1)
PP7403
SYNC
TUNER 12V
TUNER VIDEO
GND (TUNER)
TO P8703 (Page: 4-84/D-1)
PP7402
NON SW 5V
FS CLOCK
FS DATA
FS CS
TUNER 12V
TO P8702 (Page: 4-84/E-1)
PP7401
APC S CURVE
TV/VTR
NON SW 12V
UNREG
TO P8701 (Page: 4-84/F-1)
R7403 1K
L7404 33μ
C7401 16V470
C7407 0.1
D7401 MA723
C7410 6V100
L7403 33μ
R7408 220
R7407 220
C7406 0.01
L7401 33μ
L7402 33μ
C7402 0.01
C7403 0.01
C7404 16V10
C7405 0.01
C7409 16V10
PK7301
SIF
GND
TUNER AUDIO (N)
AUDIO DEF (S)
REG 12.3V
SYNC
TO P87301 (Page: 4-70/E-1)
PK7302
BILINGUAL
STEREO
TUNER AUDIO (R)
GND
TUNER AUDIO (L)
GND
TO P87302 (Page: 4-70/D-1)
DECODER PACK C.B.A. (VEP07871A)
INPUT/OUTPUT PACK C.B.A. (VEP03A72A)
PP3021
AUDIO -5V
AUDIO +5V
TUNER AUDIO (L)
TUNER AUDIO (R)
GND
AUDIO IN (L)
AUDIO IN (R)
GND
AUDIO OUT (L)
AUDIO OUT (R)
GND
(AV1 AIN L)
TO P83021 (Page: 4-53/F-1)
PP3022
(AV1 A IN R)
GND
TUNER VIDEO IN
GND (TUNER)
(AV1 V IN)
GND
AV3 VIDEO IN
INPUT SEL C
INPUT SEL B
INPUT SEL A
EE
VIDEO IN
TO P83022 (Page: 4-53/E-1)
PP3023
SEP Y
REG 5V
SEP C
TEST SIG
WIDE
GND
REC WIDE
REG 12.3V
(VIDEO OUT)
C OUT
GND
Y+C OUT
TO P83023 (Page: 4-53/C-1)
R7414 3300
PP3024
Y OUT
FM INPUT SEL A
FM INPUT SEL B
AV3
UNREG 45V
CANAL
EDIT CTL
AV VTR
NON SW 5.3V
UNREG 14V
TO P83024 (Page: 4-53/B-1)
D3003 1SS254
P1001
GND (MOTOR)
UNREG -8V
UNREG 45V
GND
GND
NON SW 12V
UNREG 14V
UNREG 14V
REG 12.3V
REG 12.3V
NON SW 5.3V
NON SW 5.3V
REG 5V
REG 5V
POWER OFF
TO POWER P1102 (Page: 4-1/B-12)
P1002
GND
GND
GND
TO POWER P1103 (Page: 4-1/A-12)
PP3001
Y OUT
GND
Y IN
AI CNT
VSS
REC Y
(S.P.B LEVEL)
REG 5V
REG 12.3V
TO PS301 (Page: 4-30/G-1)
PP3002
ENV LEVEL 1
EDIT
ENV LEVEL 2
EE
ART V SYNC
PICTURE CTL
RF Y
ROTARY SW
S-VHS
MESECAM
EX REC 5V
LP
TO PS302 (Page: 4-30/E-1)
PP3003
H PULSE
EE C IN
HEAD SW
TBC C OUT
P.B CPS
CPN
GND
NTSC
RF C
TRICK
REC C
REF OSC
COLOUR
TO PS303 (Page: 4-30/E-1)
LUMINANCE & CHROMINANCE PACK C.B.A. (VEP03A61A)
P3002
GND
AV3 AUDIO IN (L)
GND
AV3 AUDIO IN (R)
GND
AV3 VIDEO IN
GND
AV3 C IN
GND
AV3 Y IN
TO TIMER P7503 (Page: 4-74/A-20)
R3001 75
R3002 75
(EXCEPT VITC)
P3004 (VITC ONLY)
EE Y IN
GND
Y/C Y OUT
GND
VV Y IN
GND
NON SW 5V
VITC CLOCK
VITC DATA IN
VITC DATA OUT
TIMER BUS CLK
TIMER BUS TLK
EE C MUTE
P3003
TBC Y OUT
GND
TBC Y IN
GND
TBC C OUT
GND
TBC C IN
GND
REF OSC
GND
REG 12.3V
NTSC
REG 5V
TO TBC P9001 (Page: 4-45/B-1)
L3005 VLQ0556
L3006 VLQ0556
L3007 VLQ0556
L3008 VLQ0556
L3003 33μ
Q3005 MSD601
Q3006 MSD601
C3030 6V47
VHS REC
S-VHS REC
R3027 220
REC C
VR3003 2K B
QR3001 MRN1403 (EX REC ON)
C3027 1000P
Q3001 MSD602
C3026 1000P
Q3002 2SB1322
QR3002 MRN1403
R3003 33K
R3004 68K
22K
VIDEO OUT
Y OUT
C OUT
(A19)
(A20)
(A21)
(B18)

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE

AUDIO MAIN SIGNAL PATH IN REC MODE
AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE


A - LINE
B - LINE
PP3011
PP3012
PP3013
SUB LUMINANCE & CHROMINANCE PACK C.B.A. (VEP03A62A)
TO PS3303 (Page: 4-41/C-5)
TO PS3302 (Page: 4-41/E-5)
TO PS3501 (Page: 4-41/G-5)
TO HEAD AMP P601 (Page: 4-62/E-1)
P3001
IC7401 M66006FP
QR7401 MRN2403
IC3002 M52055FP
IC3001 AN3581S
QR1001 MRN1402
QR1002 MRN1402
Q1001 2SD1996
QR3003 MRN2402
Q3003 MSD601
Q3004 MSC2295
D1002 1SS254
D3002 MA28WA
FL3001 ELB4H020
L3004 VLO0396
L3002 33µ
L3001 33µ
PP7405
RF CONVERTER UNIT (ENC17984)
PP3011-2 PLAY
PP3011-7 REC
PP3011-11 REC 150mVp-p (20µsec. div)
PP3011-18 PLAY 350mVp-p (20µsec. div)
PP3012-7 REC/PLAY 5.0Vp-p (10msec. div)
PP3012-12, 14 REC 0.1Vp-p (20µsec. div)
PP3013-1 REC 0.9Vp-p (20µsec. div)
PP3013-7 REC/PLAY 1.0Vp-p (20µsec. div)
PP3013-2 REC 0.6Vp-p (20µsec. div)
PP3013-8 REC/PLAY 290mVp-p (20µsec. div)
PP3013-4 PLAY 1.2Vp-p (20µsec. div)
PP3013-5 PLAY 0.3Vp-p (20µsec. div)
TO SYSTEM CONTROL & SERVO SECTION (Page: 4-6/D-7)
TO AUDIO SECTION (Page: 4-14/B-6)

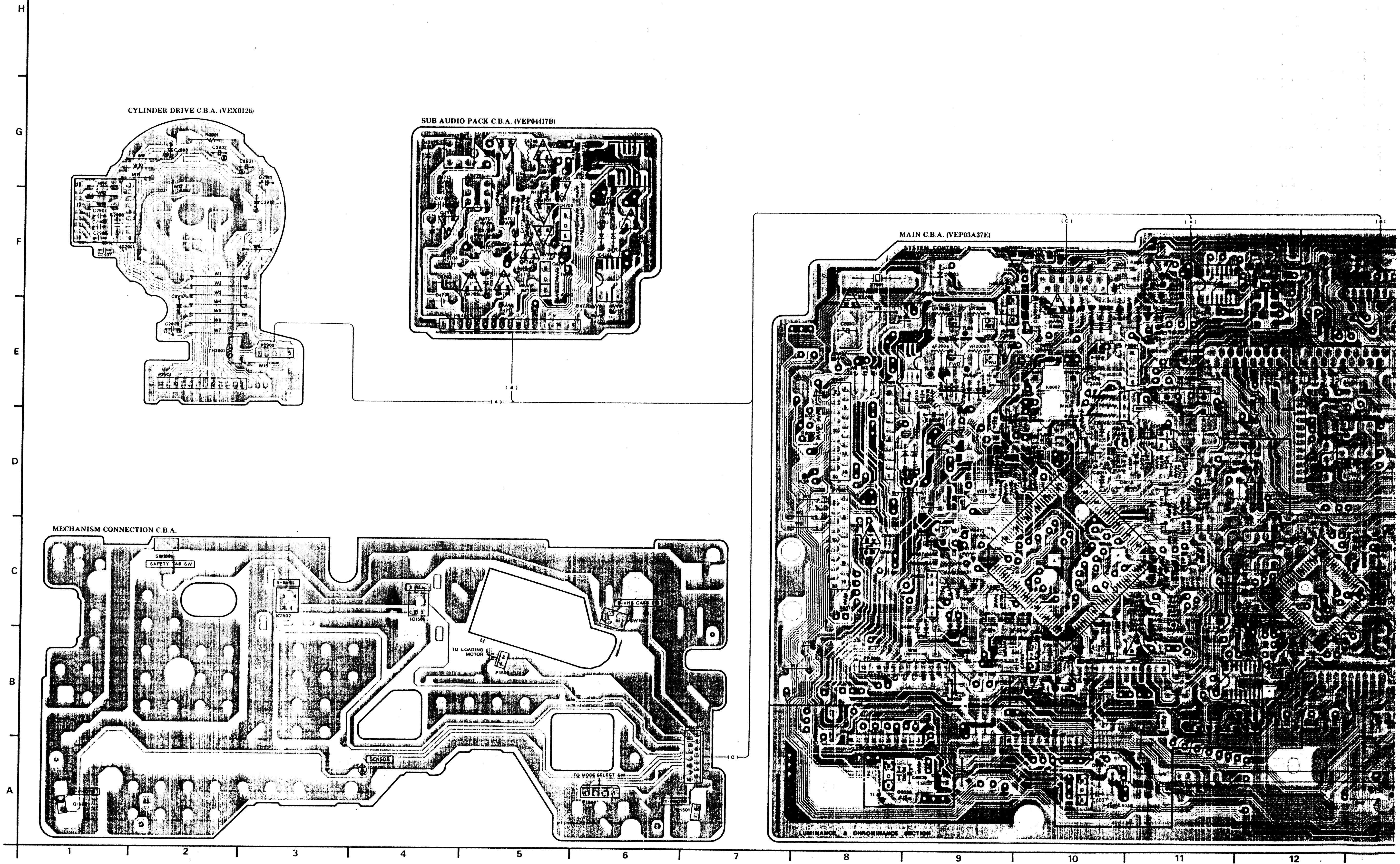
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

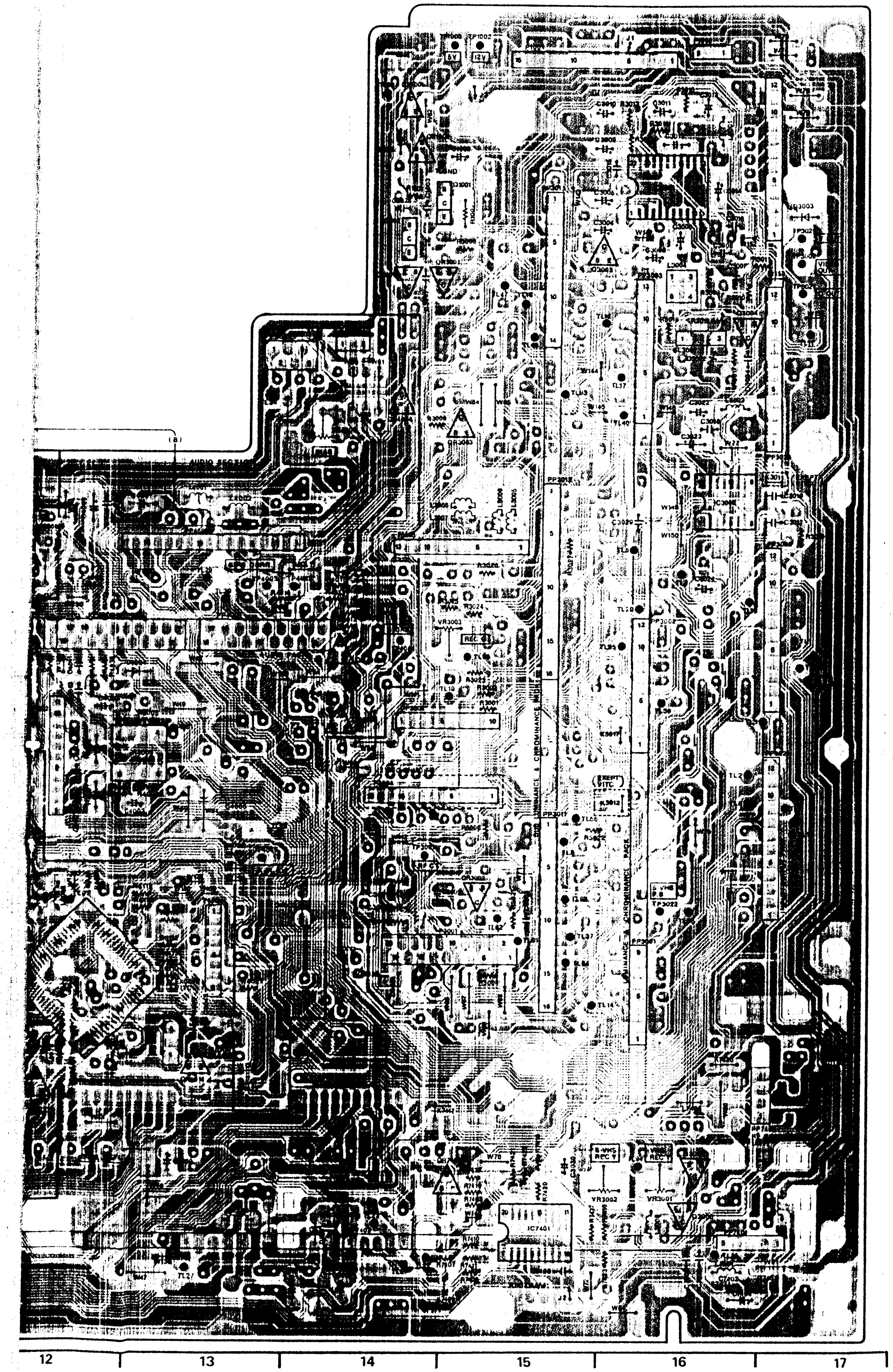
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

12 13 14 15 16 17 18 19 20 21 22 23

4-6. MAIN C.B.A. (VEP03A37E)


H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
CYLINDER DRIVE C.B.A. (VEX0126)
SUB AUDIO PACK C.B.A. (VEP04417B)
MAIN C.B.A. (VEP03A37E)
SYSTEM CONTROL
MECHANISM CONNECTION C.B.A.
SAFETY TAB SW
S-REEL
T-REEL
IC1502
TO LOADING MOTOR
SENSOR
TO MODE SELECT SW
LUMINANCE & CHROMINANCE SECTION
(A)
(B)
(C)



MAIN C.B.A. ADDRESS INFORMATION

SYSTEM CONTROL & SERVO Section	
Transistor	
Q1501	A-7
Q1502	A-1
Q2001	D-12
Q2002	F-12
Q6001	E-9
Q6002	E-10
Q6003	A-10
Q6004	F-11
Q6005	B-11
Q6006	B-12
Q6008	A-8
Transistor & Resistor	
QR2001	D-11
QR2002	E-9
QR6001	E-8
QR6002	C-8
QR6003	C-8
QR6004	B-11
QR6009	B-10
QR6012	B-11
QR6013	F-9
QR6014	B-13
QR6015	F-12
Integrated Circuit	
IC1501	C-4
IC1502	C-3
IC2001	E-9
IC2002	F-11
IC2901	F-1
IC6001	C-10
IC6002	C-12
IC6003	B-10
IC6005	B-12
IC6007	C-12
IC6008	E-10
Test Point	
TP2001	C-11
TP2002	D-11
TP2031	E-11
TP2032	E-11
TP6010	E-10
TP6011	E-10
Adjustment	
VR2001	D-12
VR2002	E-9
VR2003	E-9
VR2004	E-9
VR2005	E-9
Connector	
P1503	B-5
P1504	A-6
P1505	B-7
P2001	E-11
P2901	E-2
P2902	E-3
P6001	F-10
P6003	C-9
P6004	C-13
P7401	E-8
P7402	D-8
PP2001	B-8
PP2002	B-11
PP7406	E-8

ADDRESS INFORMATION

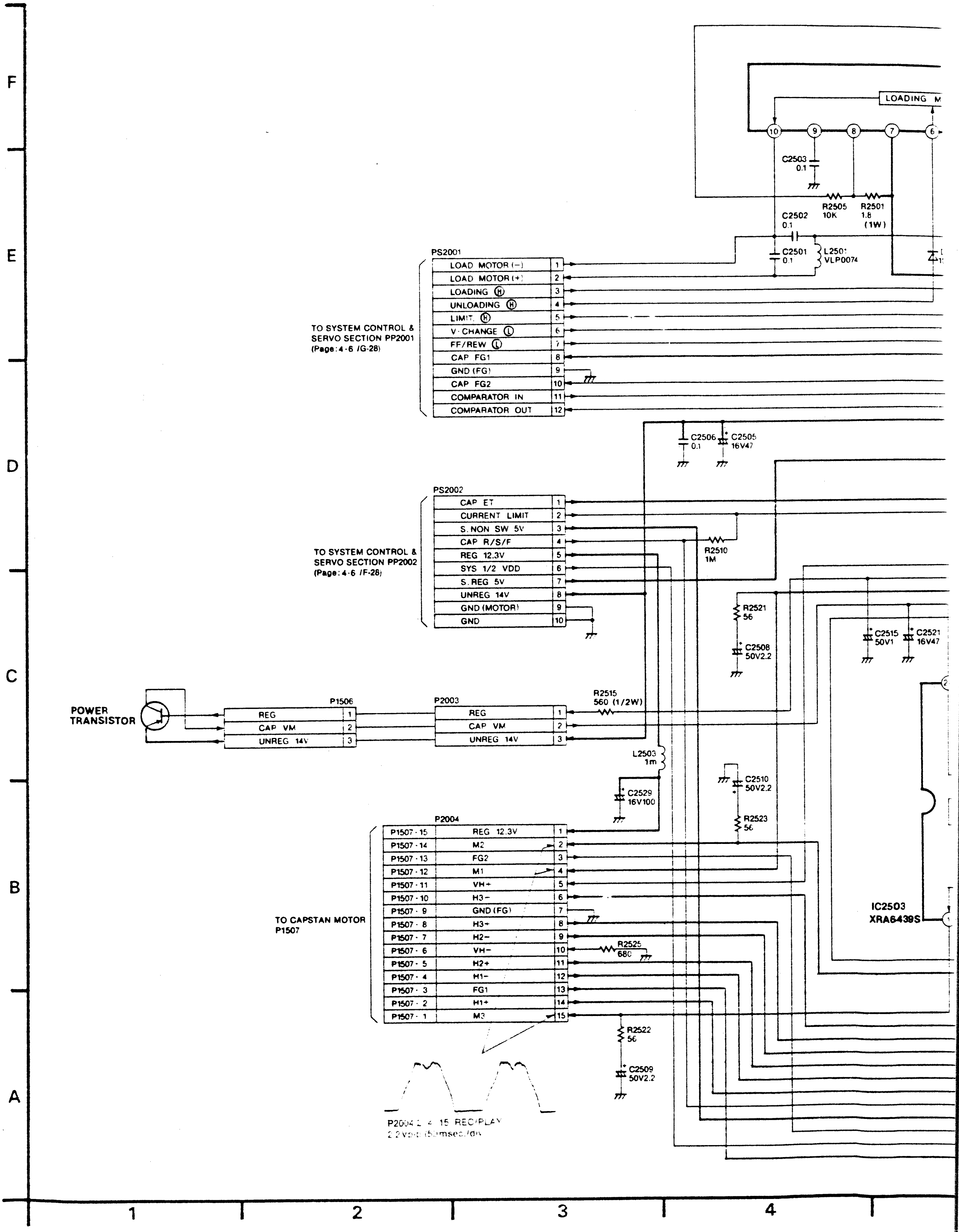
LUMINANCE & CHROMINANCE Section	
Transistor	
Q1001	H-15
Q3001	G-14
Q3002	H-14
Q3003	G-15
Q3004	G-16
Q3005	B-16
Q3006	A-16
Transistor & Resistor	
QR1001	H-14
QR1002	H-14
QR3001	G-15
QR3002	C-15
QR3003	F-15
QR7401	B-15
Integrated Circuit	
IC3001	H-16
IC3002	F-16
IC7401	A-15
Test Point	
TP1001	E-17
TP1002	H-15
TP1003	H-15
TP3001	D-14
TP3002	G-17
TP3021	G-17
TP3022	C-16
TP8021	G-17
Adjustment	
VR3001	B-16
VR3002	B-16
VR3003	E-15
Connector	
P1001	H-15
P1002	H-16
P3001	C-15
P3002	D-14
P3003	F-14
P3004	D-14
PK7301	B-10
PK7302	B-8
PP3001	C-16
PP3002	E-16
PP3003	G-16
PP3011	D-15
PP3012	F-15
PP3013	H-15
PP3021	D-17
PP3022	E-17
PP3023	F-17
PP3024	H-17
PP7401	A-16
PP7402	A-14
PP7403	A-13
PP7404	A-11
PP7405	B-17

ADDRESS INFORMATION

AUDIO Section & SUB AUDIO PACK C.B.A.	
Transistor	
Q4701	F-5
Q4702	G-5
Q4703	F-5
Q4704	F-5
Q4705	G-5
Q4706	F-5
Q4707	F-4
Q4708	F-5
Transistor & Resistor	
QR4001	D-12
QR4002	E-14
QR4003	D-14
QR4004	F-14
QR4005	B-10
QR4701	F-5
QR4702	F-5
QR4703	G-5
QR4704	F-6
Integrated Circuit	
IC4001	D-13
IC4701	F-6
IC4702	G-6
Adjustment	
VR4002	[illegible]-14
Test Point	
TP4002	E-14
TP4003	E-13
TP4004	E-14
TP4501	E-11
TP4511	D-13
Connector	
P4001	G-14
P4002	D-12
P4003	G-14
PP4001	E-13
PP4002	E-12
PP4003	E-11
PP4501	F-13
PS4701	E-4

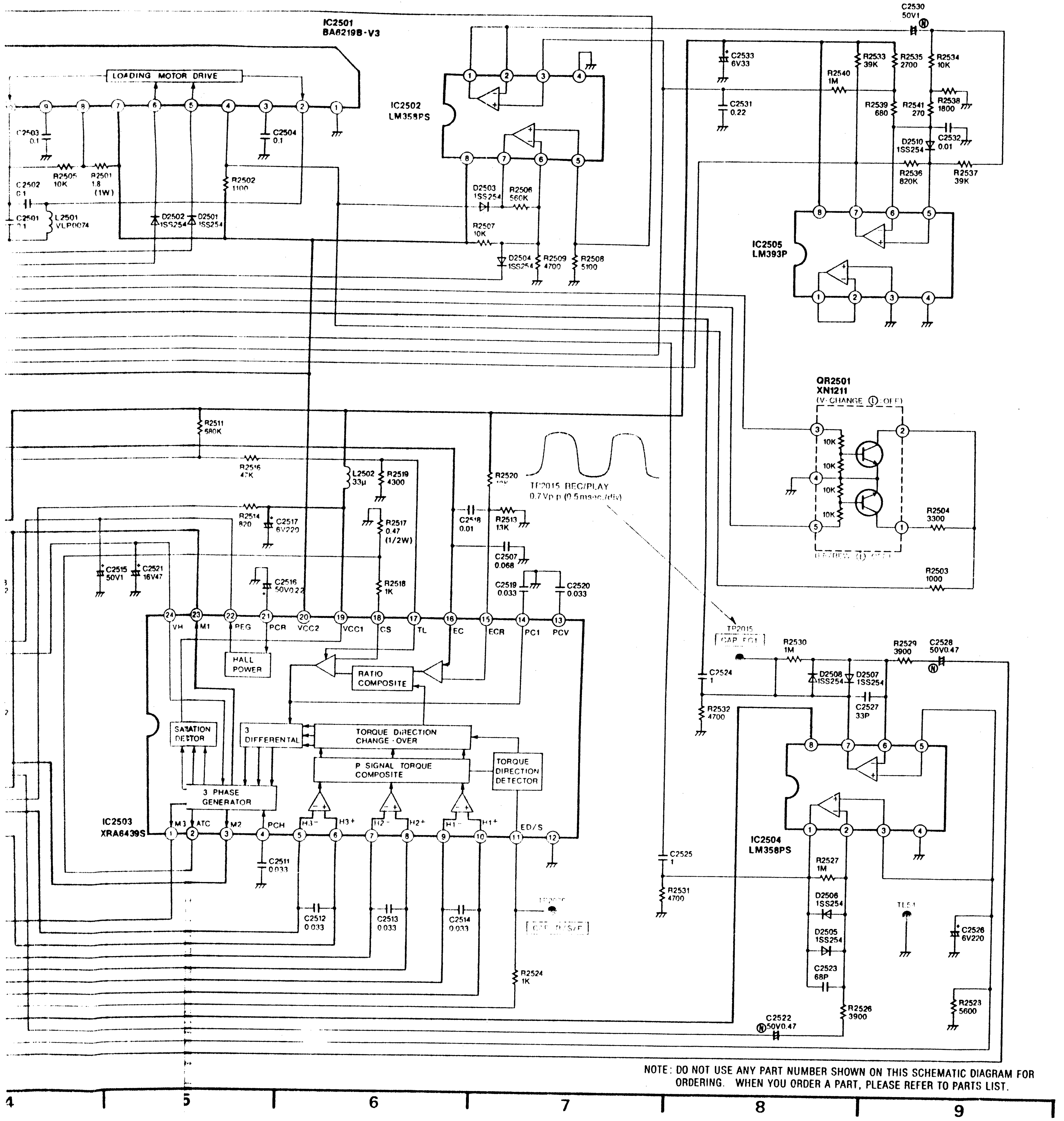
ADDRESS INFORMATION

4-7. CAPSTAN DRIVE PACK SCHEMATIC DIAGRAM



F
E
D
C
B
A
1
2
3
4
LOADING M
C2503 0.1
R2505 10K
R2501 1.8 (1W)
C2502 0.1
C2501 0.1
L2501 VLP0074
PS2001
LOAD MOTOR (−)
LOAD MOTOR (+)
LOADING Ⓗ
UNLOADING Ⓗ
LIMIT Ⓗ
V·CHANGE Ⓛ
FF/REW Ⓛ
CAP FG1
GND (FG)
CAP FG2
COMPARATOR IN
COMPARATOR OUT
TO SYSTEM CONTROL & SERVO SECTION PP2001 (Page:4-6 /G-28)
C2506 0.1
C2505 16V47
PS2002
CAP ET
CURRENT LIMIT
S.NON SW 5V
CAP R/S/F
REG 12.3V
SYS 1/2 VDD
S.REG 5V
UNREG 14V
GND (MOTOR)
GND
TO SYSTEM CONTROL & SERVO SECTION PP2002 (Page:4-6 /F-28)
R2510 1M
R2521 56
C2508 50V2.2
C2515 50V1
C2521 16V47
POWER TRANSISTOR
P1506
REG
CAP VM
UNREG 14V
P2003
REG
CAP VM
UNREG 14V
R2515 560 (1/2W)
L2503 1m
C2529 16V100
C2510 50V2.2
R2523 56
P2004
P1507·15 REG 12.3V
P1507·14 M2
P1507·13 FG2
P1507·12 M1
P1507·11 VH+
P1507·10 H3−
P1507·9 GND (FG)
P1507·8 H3+
P1507·7 H2−
P1507·6 VH−
P1507·5 H2+
P1507·4 H1−
P1507·3 FG1
P1507·2 H1+
P1507·1 M3
TO CAPSTAN MOTOR P1507
R2525 680
R2522 56
C2509 50V2.2
IC2503 XRA6439S
P2004 2, 4, 15 REC/PLAY
2.2Vp-p (5msec/div)

CAPSTAN SERVO SPEED LOOP


IC2501
BA6219B-V3
LOADING MOTOR DRIVE
IC2502
LM358PS
IC2503
XRA6439S
IC2504
LM358PS
IC2505
LM393P
QR2501
XN1211
(V-CHANGE ① OFF)
TP2015 REC/PLAY
0.7Vp-p (0.5msec/div)
TP2015
CAP. FG1
HALL POWER
RATIO COMPOSITE
SATURATION DETECTOR
3 DIFFERENTIAL
TORQUE DIRECTION CHANGE-OVER
P SIGNAL TORQUE COMPOSITE
TORQUE DIRECTION DETECTOR
3 PHASE GENERATOR
VH
M1
PEG
PCR
VCC2
VCC1
CS
TL
EC
ECR
PC1
PCV
M3
ATC
M2
PCH
H3-
H3+
H2-
H2+
H1-
H1+
ED/S
L2501 VLP0074
L2502 33μ
R2505 10K
R2501 1.8 (1W)
R2502 1100
R2506 560K
R2507 10K
R2509 4700
R2508 5100
R2511 680K
R2516 47K
R2519 4300
R2514 820
R2517 0.47 (1/2W)
R2518 1K
R2520
R2513 13K
R2533 39K
R2535 2700
R2534 10K
R2540 1M
R2539 680
R2541 270
R2538 1800
R2536 820K
R2537 39K
R2504 3300
R2503 1000
R2530 1M
R2529 3900
R2532 4700
R2531 4700
R2527 1M
R2526 3900
R2523 5600
R2524 1K
C2503 0.1
C2504 0.1
C2502 0.1
C2501 0.1
C2515 50V1
C2521 16V47
C2517 6V220
C2516 50V0.22
C2518 0.01
C2507 0.068
C2519 0.033
C2520 0.033
C2511 0.033
C2512 0.033
C2513 0.033
C2514 0.033
C2530 50V1
C2533 6V33
C2531 0.22
C2532 0.01
C2524 1
C2525 1
C2528 50V0.47
C2527 33P
C2523 68P
C2522 50V0.47
C2526 6V220
D2502 1SS254
D2501 1SS254
D2503 1SS254
D2504 1SS254
D2510 1SS254
D2508 1SS254
D2507 1SS254
D2506 1SS254
D2505 1SS254
10K
4
5
6
7
8
9

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

CAPSTAN DRIVE PACK ICs DC VOLTAGE CHART (SP MODE)

REF. NO.	IC2501										IC2502									
MODE	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8		
STOP	0	0	0	6.9	0	0	14.4	14.4	0	0	0	0	0	0	4.9	0.7	13.1	14.4		
PLAY	0	0.4	0	6.8	0	0	14.3	14.3	0	0	0	0	0	0	4.8	0.7	13.0	14.3		
REC	0	0.3	0.1	6.8	0	0	14.3	14.3	0	0.1	0	0	0	0	4.8	0.7	13.0	14.3		
F.F	0.1	0	0	14.2	0.1	0.1	14.3	14.3	0	0	0	0	0	0	4.8	0.7	13.7	14.3		
REW	0	0.2	0	14.2	0	0	14.3	14.3	0.1	0	0	0	0	0	4.8	0.7	13.7	14.3		
REF. NO.	IC2503																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	1.1	0	1.1	1.5	2.3	2.4	2.3	2.4	2.4	2.3	2.0	0	1.2	2.6	2.9	1.4	0	0	5.2	14.4
PLAY	3.1	0.1	3.1	1.5	2.4	2.4	2.4	2.4	2.4	2.4	0	0	0.8	0.7	2.9	2.6	0.5	0.1	5.2	14.3
REC	3.1	0.1	3.1	1.5	2.4	2.4	2.4	2.4	2.4	2.4	0	0	0.8	0.7	2.9	2.6	0.5	0.1	5.2	14.3
F.F	7.7	0.2	7.7	1.5	2.4	2.4	0	2.4	2.4	2.4	0	0.1	1.0	0.8	2.9	1.9	0.5	0	5.2	14.3
REW	7.3	0.2	7.3	1.5	2.4	2.4	2.4	2.4	2.4	2.4	5.0	0.1	0.9	0.7	2.9	2.5	0.5	0.2	5.2	14.2
REF. NO.	IC2503																			
MODE	21	22	23	24																
STOP	0.5	13.8	1.1	4.7																
PLAY	2.3	13.1	3.1	4.7																
REC	2.3	13.1	3.1	4.6																
F.F	12.1	5.8	7.3	14.2																
REW	8.0	6.5	7.1	14.2																
REF. NO.	IC2504										IC2505									
MODE	1	2	3	4	5	6	7	8			1	2	3	4	5	6	7	8		
STOP	2.5	2.5	2.5	0	2.5	2.5	2.5	5.0			0	0.5	0.5	0	2.4	2.9	0	5.2		
PLAY	2.5	2.5	2.5	0	2.5	2.5	2.5	5.0			0	0.4	0.4	0	2.4	2.9	0	5.2		
REC	2.5	2.5	2.5	0	2.5	2.5	2.5	5.0			0	0.4	0.4	0	2.4	2.9	0	5.2		
F.F	2.5	2.5	2.5	0	2.5	2.5	2.5	5.0			0	0.4	0.4	0	2.4	2.9	0	5.2		
REW	2.5	2.5	2.5	0	2.5	2.5	2.5	5.0			0	0.4	0.4	0	2.4	2.9	0	5.2		

CAPSTAN DRIVE PACK TRANSISTORs DC VOLTAGE CHART (SP MODE)

REF. NO.	QR2501				
MODE	1	2	3	4	5
STOP	0	0.1	4.9	0	4.9
PLAY	0	0.1	4.9	0	4.9
REC	0	0.1	4.9	0	4.9
F.F	14.2	14.2	0	0	0
REW	14.2	14.2	0	0	0

4-8. CAPSTAN DRIVE PACK C.B.A. (VEP02412B)

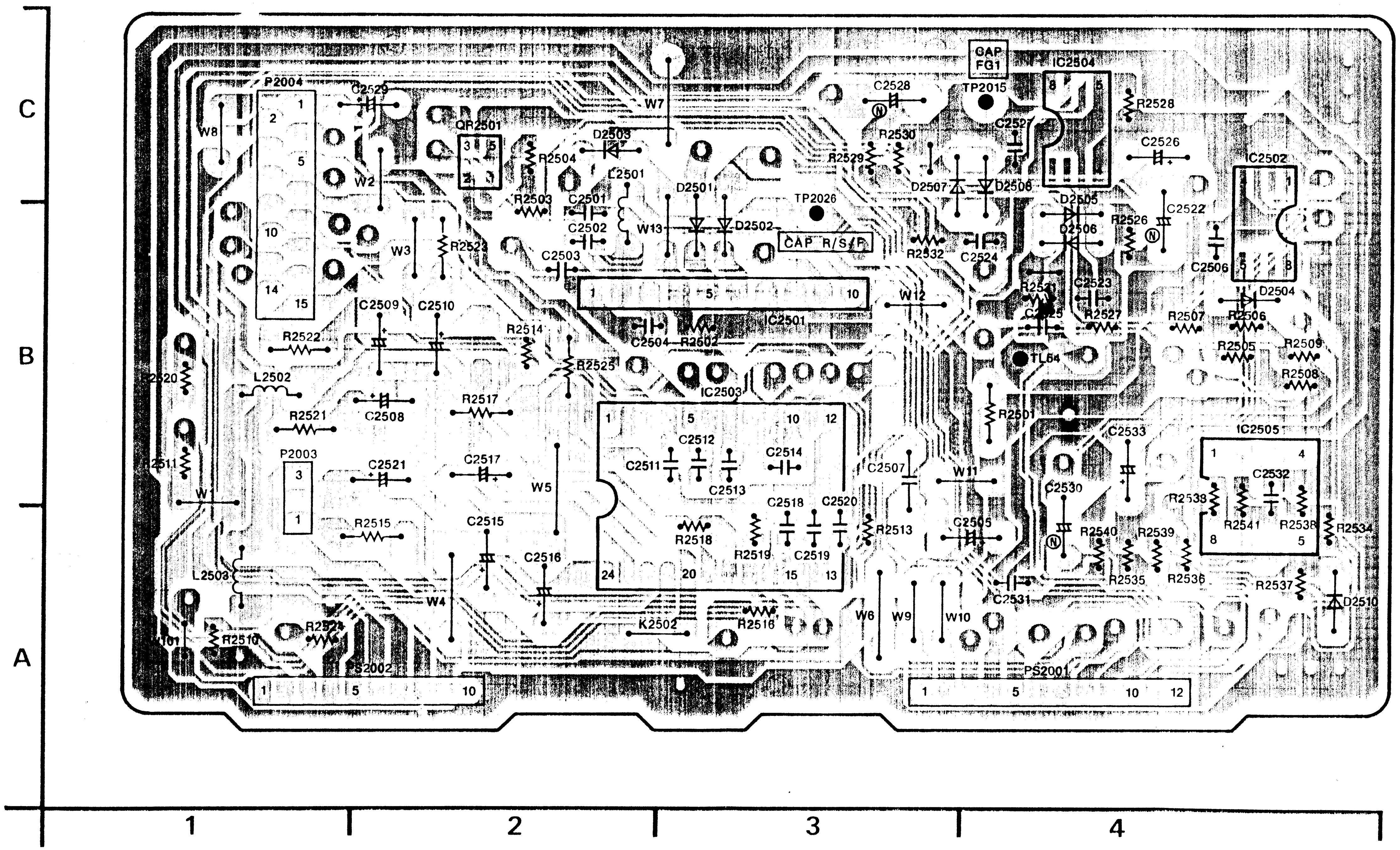
8		
14.4		
14.3		
14.3		
14.3		
14.3		

18	19	20
0	5.2	14.4
0.1	5.2	14.3
0.1	5.2	14.3
0	5.2	14.3
0.2	5.2	14.2

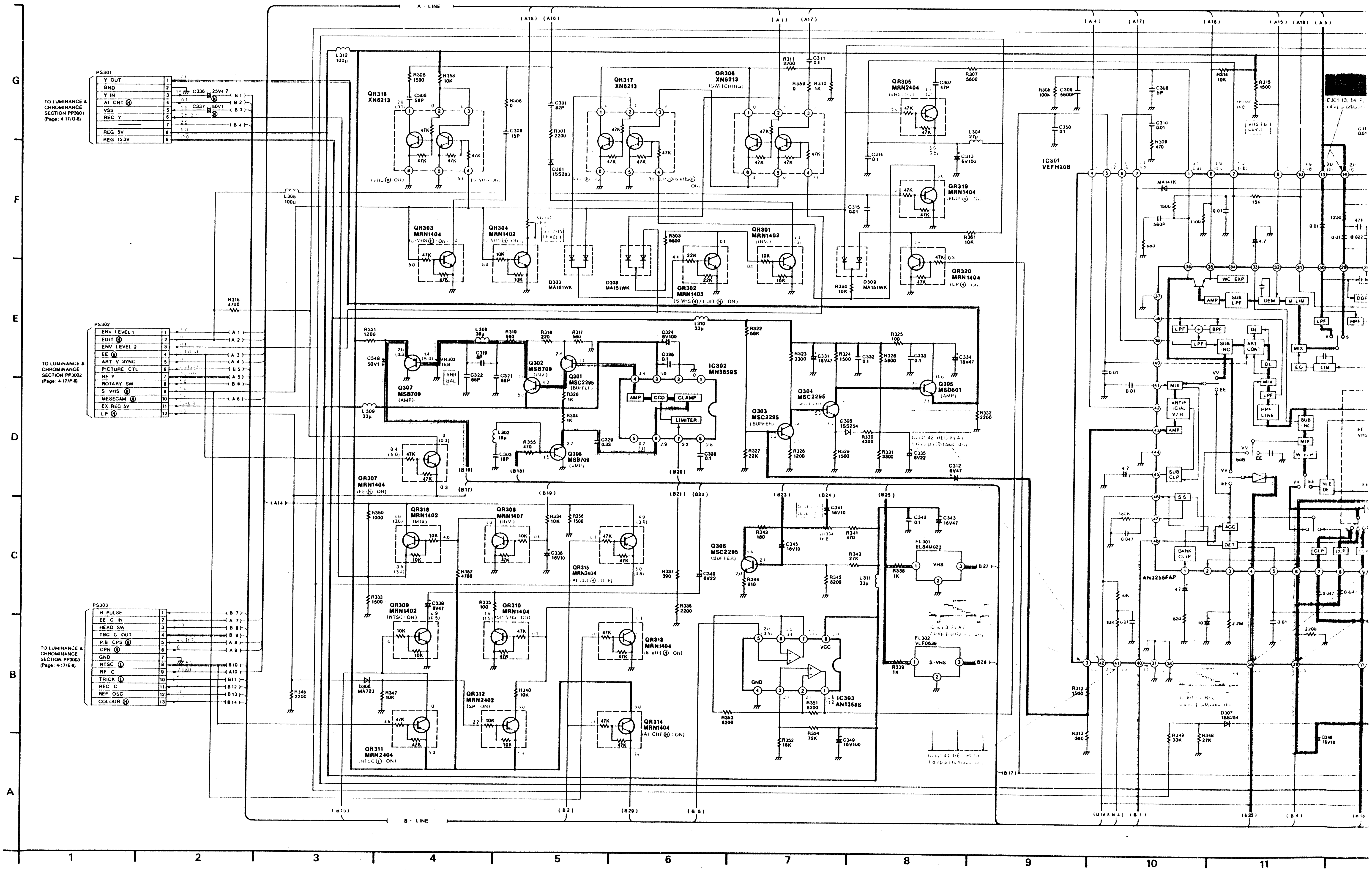
8		
5.2		
5.2		
5.2		
5.2		
5.2		

CAPSTAN DRIVE PACK C.B.A.	
Transistor & Resistor	
QR2501	C-2
Integrated Circuit	
IC2501	B-3
IC2502	C-4
IC2503	B-3
IC2504	C-4
IC2505	B-4
Test Point	
TP2015	C-4
TP2026	B-3
Connector	
P2003	B-1
P2004	C-1
PS2001	A-4
PS2202	A-2

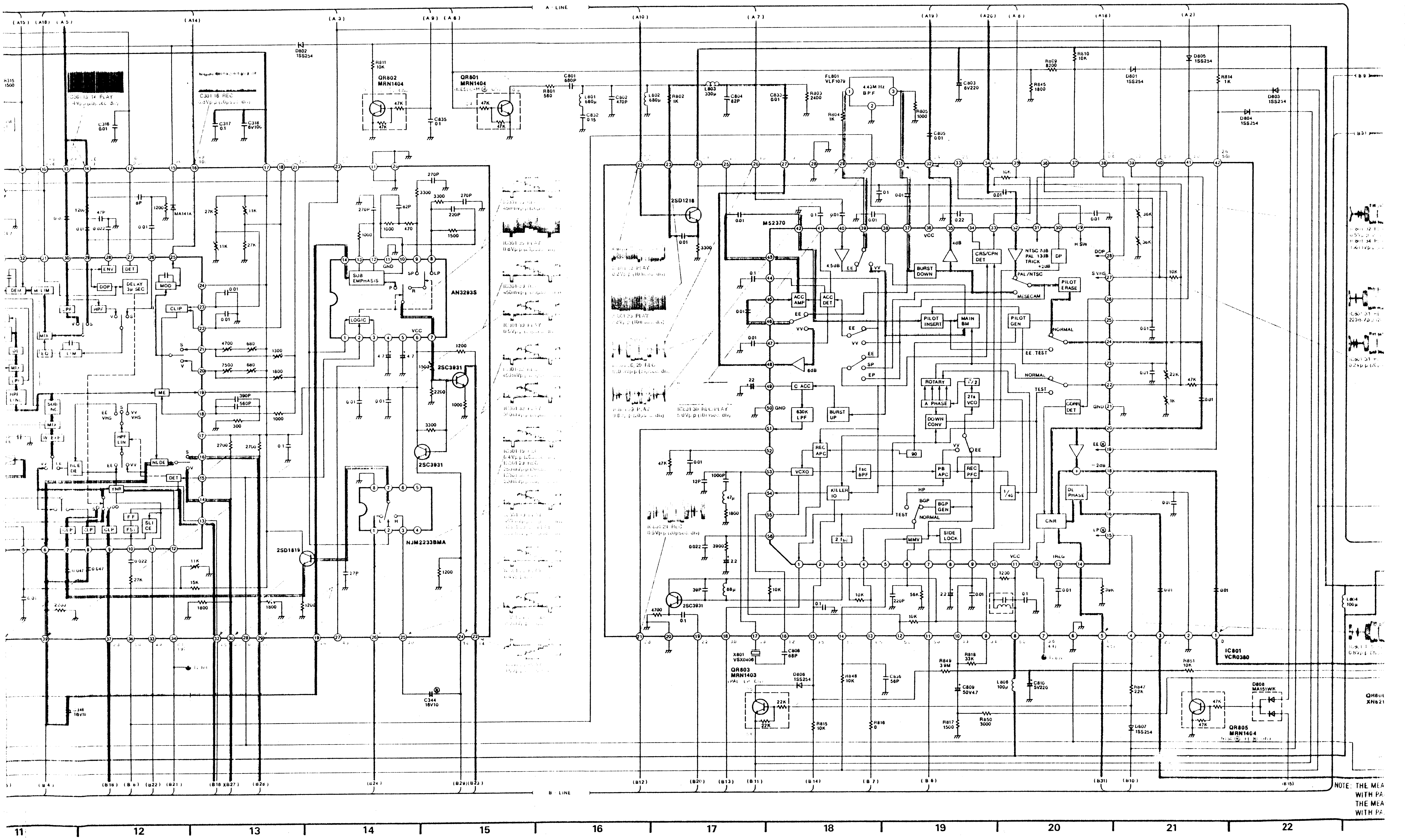
ADDRESS INFORMATION


C
B
A
1
2
3
4
P2004
C2529
QR2501
W7
D2503
R2504
L2501
D2501
D2502
TP2026
CAP R/S/P
W13
R2503
C2501
C2502
C2503
W8
W2
W3
R2523
CAP FG1
IC2504
C2528
TP2015
C2527
R2528
R2530
R2529
C2526
D2507
D2508
D2505
D2506
R2526
C2522
IC2502
R2532
C2524
C2506
C2523
R2531
C2525
R2527
D2504
R2507
R2506
R2505
R2509
R2508
TL64
W12
IC2501
C2504
R2502
C2509
C2510
R2522
R2514
R2525
R2520
L2502
IC2503
R2521
C2508
R2517
R2501
R2511
P2003
C2521
C2517
W5
C2512
C2514
C2511
C2513
C2507
W11
C2533
IC2505
C2532
C2530
R2538
R2541
R2533
R2534
W1
R2515
C2515
C2516
C2518
C2520
R2518
R2519
C2519
R2513
C2505
R2540
R2539
R2535
R2536
R2537
D2510
C2531
L2503
W4
K2502
R2516
W6
W9
W10
R2510
R2524
PS2002
PS2001
1
5
10
12
14
15
20
24
13

4·9. LUMINANCE & CHROMINANCE PACK SCHEMATIC DIAGRAM

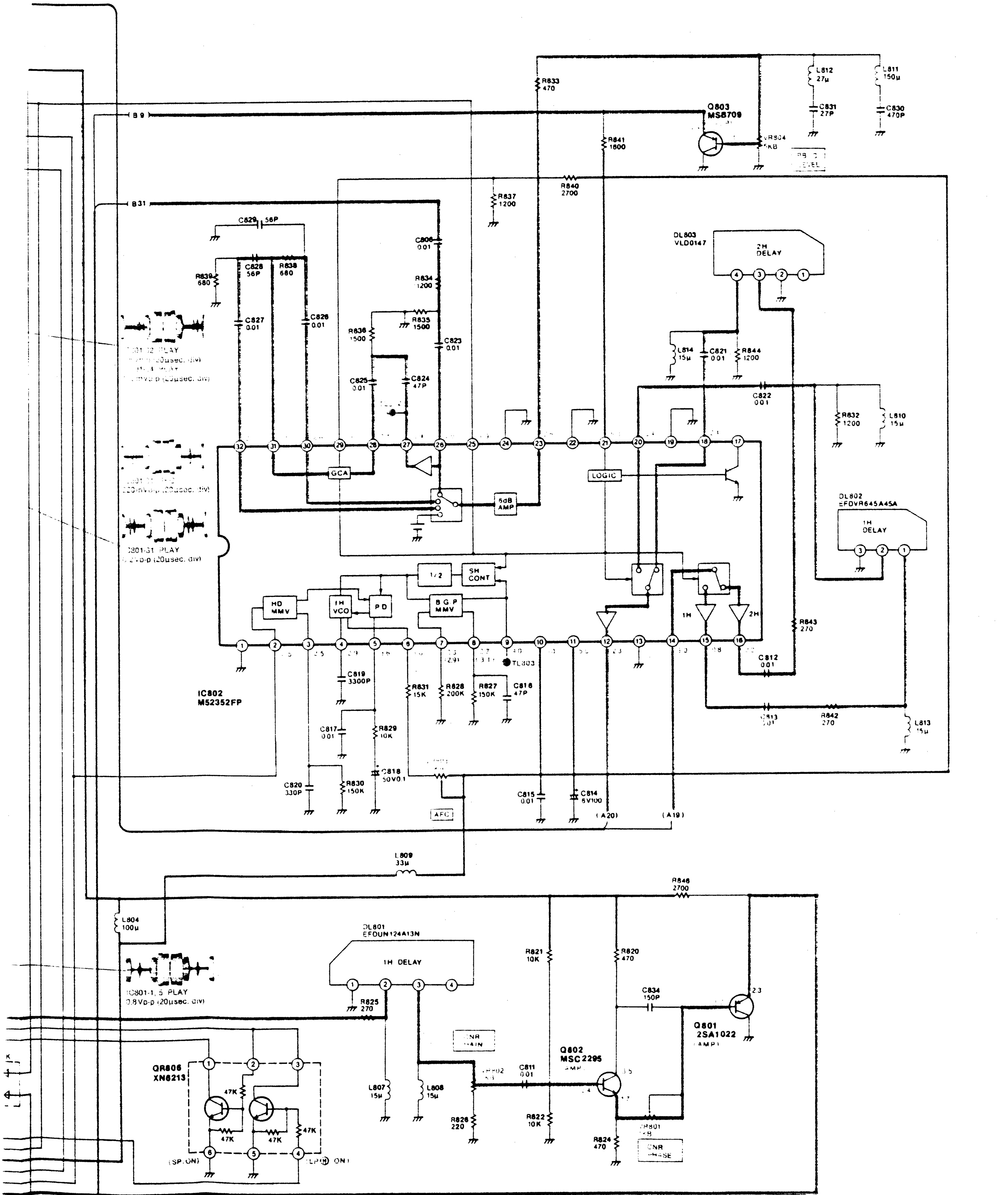

A - LINE
B - LINE
PS301
Y OUT
GND
Y IN
AI CNT Ⓗ
VSS
REC Y
REG 5V
REG 12.3V
TO LUMINANCE & CHROMINANCE SECTION PP3001 (Page 4-17/G-8)
PS302
ENV LEVEL 1
EDIT Ⓗ
ENV LEVEL 2
EE Ⓗ
ART V SYNC
PICTURE CTL
RF Y
ROTARY SW
S-VHS Ⓗ
MESECAM Ⓗ
EX.REC 5V
LP Ⓗ
TO LUMINANCE & CHROMINANCE SECTION PP3002 (Page 4-17/F-8)
PS303
H PULSE
EE C IN
HEAD SW
TBC C OUT
P.B CPS Ⓗ
CPN Ⓗ
GND
NTSC Ⓛ
RF C
TRICK Ⓛ
REC C
REF OSC
COLOUR Ⓗ
TO LUMINANCE & CHROMINANCE SECTION PP3003 (Page 4-17/E-8)
QR316 XN6213
QR317 XN6213
QR306 XN6213 (SWITCHING)
QR305 MRN2404
QR303 MRN1404
QR304 MRN1402
QR301 MRN1402 (INV)
QR302 MRN1403 (S-VHS Ⓗ / EDIT Ⓗ : ON)
QR319 MRN1404
QR320 MRN1404
D301 1SS283
D303 MA151WK
D308 MA151WK
D309 MA151WK
IC301 VEFH20B
Q307 MSB709 (AMP)
Q302 MSB709 (INV)
Q301 MSC2295 (BUFFER)
Q308 MSB709 (AMP)
IC302 MN3859S
AMP
CCD
CLAMP
LIMITER
YNR BAL
VR303 1KB
Q303 MSC2295 (BUFFER)
Q304 MSC2295
Q305 MSD601 (AMP)
D305 1SS254
QR307 MRN1404 (EE Ⓗ : ON)
QR318 MRN1402 (MIX)
QR308 MRN1407 (INV)
QR315 MRN2404
QR309 MRN1402 (NTSC : ON)
QR310 MRN1404
QR313 MRN1404 (S-VHS Ⓗ : ON)
QR312 MRN2402 (SP : ON)
QR311 MRN2404 (NTSC Ⓛ : ON)
QR314 MRN1404 (AI CNT Ⓗ : ON)
D306 MA723
Q306 MSC2295 (BUFFER)
IC303 AN1358S
GND
VCC
FL301 EL84M022
VHS
FL302 VLF0639
S-VHS
AN3255FAP
WC EXP
AMP
SUB LPF
DEM
M-LIM
LPF
BPF
SUB NC
DL
ART CONT
MIX
EQ
LIM
ARTIFICIAL V/H
HPF LINE
SUB CLP
SS
AGC
DET
DARK CLIP
CLP
DOP
D307 1SS254
1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G

MAIN SIGNAL PATH IN REC MODE


A LINE
B LINE
AN3293S
SUB EMPHASIS
LOGIC
NJM2233BMA
2SD1819
2SC3931
QR802
MRN1404
QR801
MRN1404
D802
1SS254
M52370
2SD1218
ACC AMP
ACC DET
BURST DOWN
BURST UP
PILOT INSERT
MAIN BM
PILOT GEN
PILOT ERASE
CRS/CPN DET
ROTARY
A PHASE
DOWN CONV
C ACC
630K LPF
REC APC
VCXO
KILLER IO
fsc BPF
PB APC
REC PFC
BGP GEN
SIDE LOCK
MMV
CNR
DL PHASE
FL801
VLF1079
4.43M Hz BPF
X801
VSX0406
QR803
MRN1403
QR805
MRN1404
D808
MA151WK
D805
1SS254
D801
1SS254
D803
1SS254
D804
1SS254
D806
1SS254
D807
1SS254
IC801
VCR0380
YNR
DEM
LIM
MIX
ENV
DET
DOP
DELAY 1H SEC
MOD
CLIP
ME
NLDE
HPF LIN
NOTE: THE MEA
WITH PA
THE MEA
WITH PA
11
12
13
14
15
16
17
18
19
20
21
22

MODE

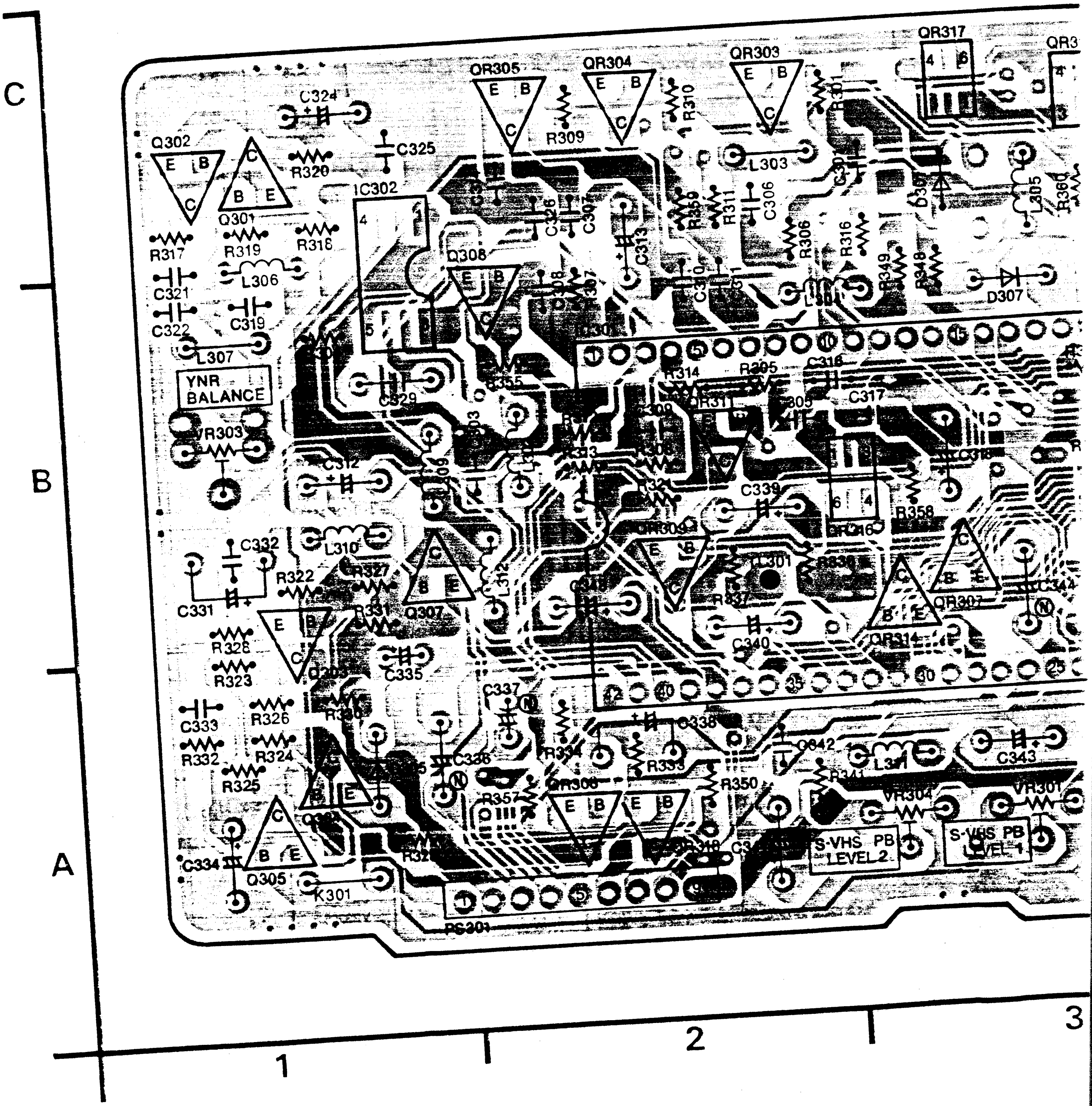
——— MAIN SIGNAL PATH IN PLAYBACK MODE


B9
B31
R833 470
Q803 MS8709
VR804 5KB
PB C LEVEL
L812 27μ
L811 150μ
C831 27P
C830 470P
R841 1800
R840 2700
R837 1200
C829 56P
C806 0.01
R834 1200
R835 1500
R836 1500
C823 0.01
C825 0.01
C824 47P
R839 680
C828 56P
R838 680
C827 0.01
C826 0.01
IC801-12 PLAY
IC801-31 PLAY
0.2Vp-p (20μsec. div)
DL803 VLD0147
2H DELAY
L814 15μ
C821 0.01
R844 1200
C822 0.01
R832 1200
L810 15μ
GCA
6dB AMP
LOGIC
DL802 EFDVR645A45A
1H DELAY
1/2
SH CONT
HD MMV
1H VCO
PD
BGP MMV
1H
2H
R843 270
C812 0.01
TL803
IC802 M52352FP
C819 3300P
R831 15K
R828 200K
R827 150K
C816 47P
C817 0.01
R829 10K
C818 50V0.1
C813 0.01
R842 270
L813 15μ
C820 330P
R830 150K
AFC
C815 0.01
C814 6V100
(A20)
(A19)
L809 33μ
R846 2700
L804 100μ
DL801 EFDUN124A13N
1H DELAY
IC801-1, 5 PLAY
0.8Vp-p (20μsec. div)
R825 270
R821 10K
R820 470
C834 150P
Q801 2SA1022 (AMP)
CNR GAIN
Q802 MSC2295 AMP
C811 0.01
QR806 XN6213
47K
L807 15μ
L808 15μ
R826 220
R822 10K
R824 470
VR801 CNR PHASE
(SP ON)
(LP(H) ON)
B15)
22
23
24
25
26
27

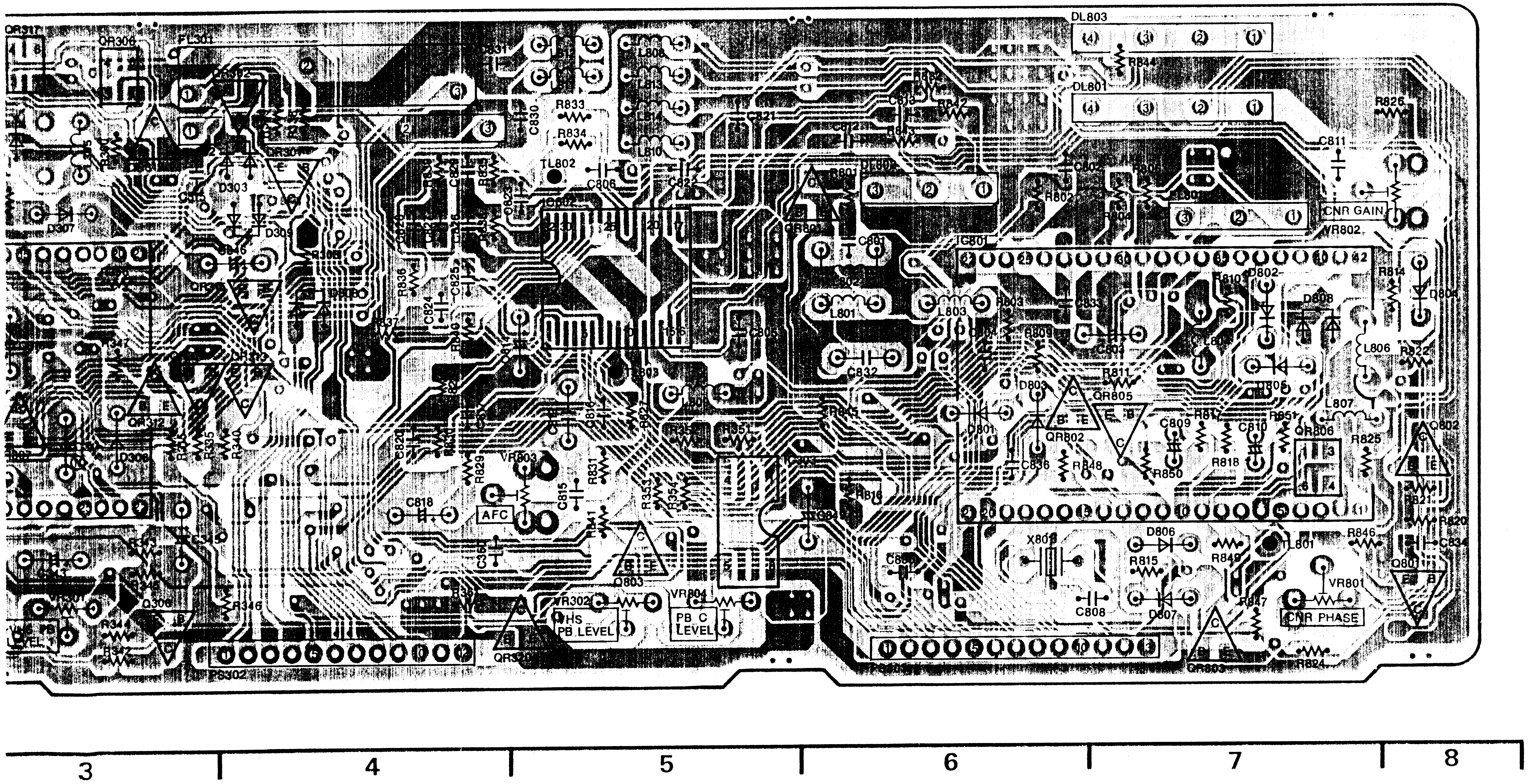
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

4-10. LUMINANCE & CHROMINANCE PACK C.B.A. (VEP03A61A)


C
B
A
1
2
3
QR305
QR304
QR303
QR317
C324
C325
Q302
Q301
R320
IC302
R309
R310
R301
L303
L305
R360
D307
R317
R319
R318
L306
C321
C322
C319
L307
Q308
C326
C307
C313
R359
R311
C306
R306
R316
R349
R348
YNR BALANCE
VR303
C329
R355
R314
R305
C316
C317
QR311
C309
C312
C339
R358
C318
QR316
QR309
C332
L310
R327
R322
C331
Q307
L312
L301
R336
R337
QR307
QR314
C344
R331
R328
R323
Q303
C335
C340
C337
C338
C333
R326
R330
C342
C343
R332
R324
R334
C336
R333
R341
L341
R325
R357
QR306
R350
VR304
VR301
QR318
S-VHS PB LEVEL 2
S-VHS PB LEVEL 1
C334
Q305
K301
PS301
E
B
C

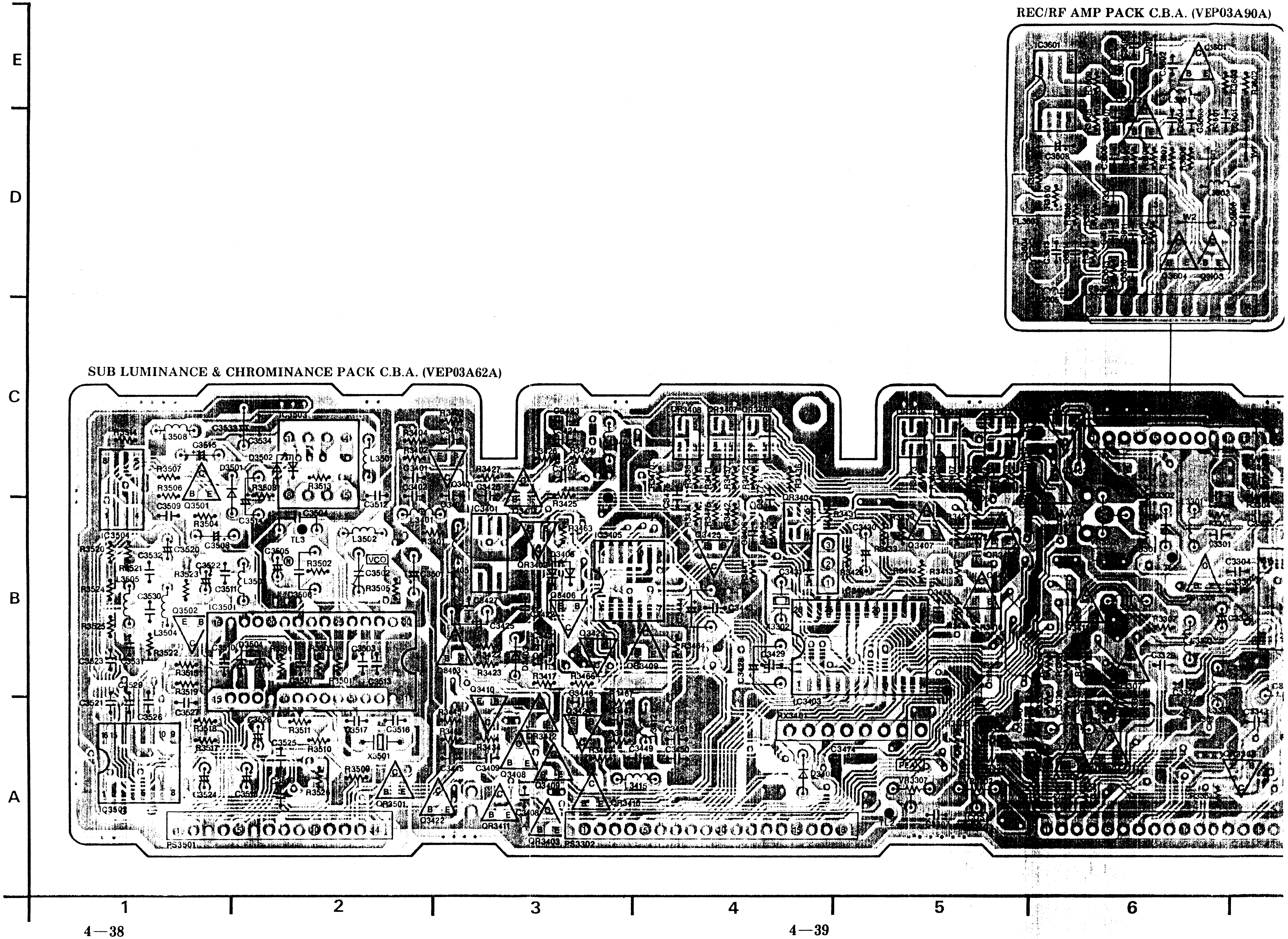
61A)


DL803
DL801
DL802
FL301
QR317
QR306
QR307
D303
D307
D309
R833
R834
TL802
C806
C830
C821
C811
R826
CNR GAIN
VR802
IC801
L801
L803
L806
L807
C832
C809
C810
C836
QR805
QR802
QR806
Q802
R825
R820
C834
Q801
VR801
CNR PHASE
X801
D806
D807
C808
R815
R849
R846
R847
R824
QR803
VR803
AFC
C818
R829
R831
C815
Q803
VR302
HS PB LEVEL
VR804
PB C LEVEL
QR320
PS302
R346
Q306
R344
R342
QR312
R335
R340
3
4
5
6
7
8

LUMINANCE & CHROMINANCE PACK C.B.A.	
Transistor	
Q301	C-1
Q302	C-1
Q303	A-1
Q304	A-1
Q305	A-1
Q306	A-3
Q307	B-1
Q308	B-2
Q801	A-8
Q802	B-8
Q803	A-5
Transistor & Resistor	
QR301	C-4
QR302	C-4
QR303	C-2
QR304	C-2
QR305	C-2
QR306	C-3
QR307	B-3
QR308	A-2
QR309	B-2
QR310	B-3
QR311	B-2
QR312	B-3
QR313	B-4
QR314	B-3
QR315	B-4
QR316	B-3
QR317	C-3
QR318	A-2
QR319	C-3
QR320	A-5
QR801	B-6
QR802	B-6
QR803	A-7
QR805	B-7
QR806	B-7
Integrated Circuit	
IC301	B-2
IC302	C-1
IC303	A-5
IC801	B-6
IC802	B-5
Adjustment	
VR301	A-3
VR302	A-5
VR303	B-1
VR304	A-3
VR801	A-7
VR802	B-7
VR803	A-5
VR804	A-5
Connector	
PS301	A-2
PS302	A-4
PS303	A-6

ADDRESS INFORMATION

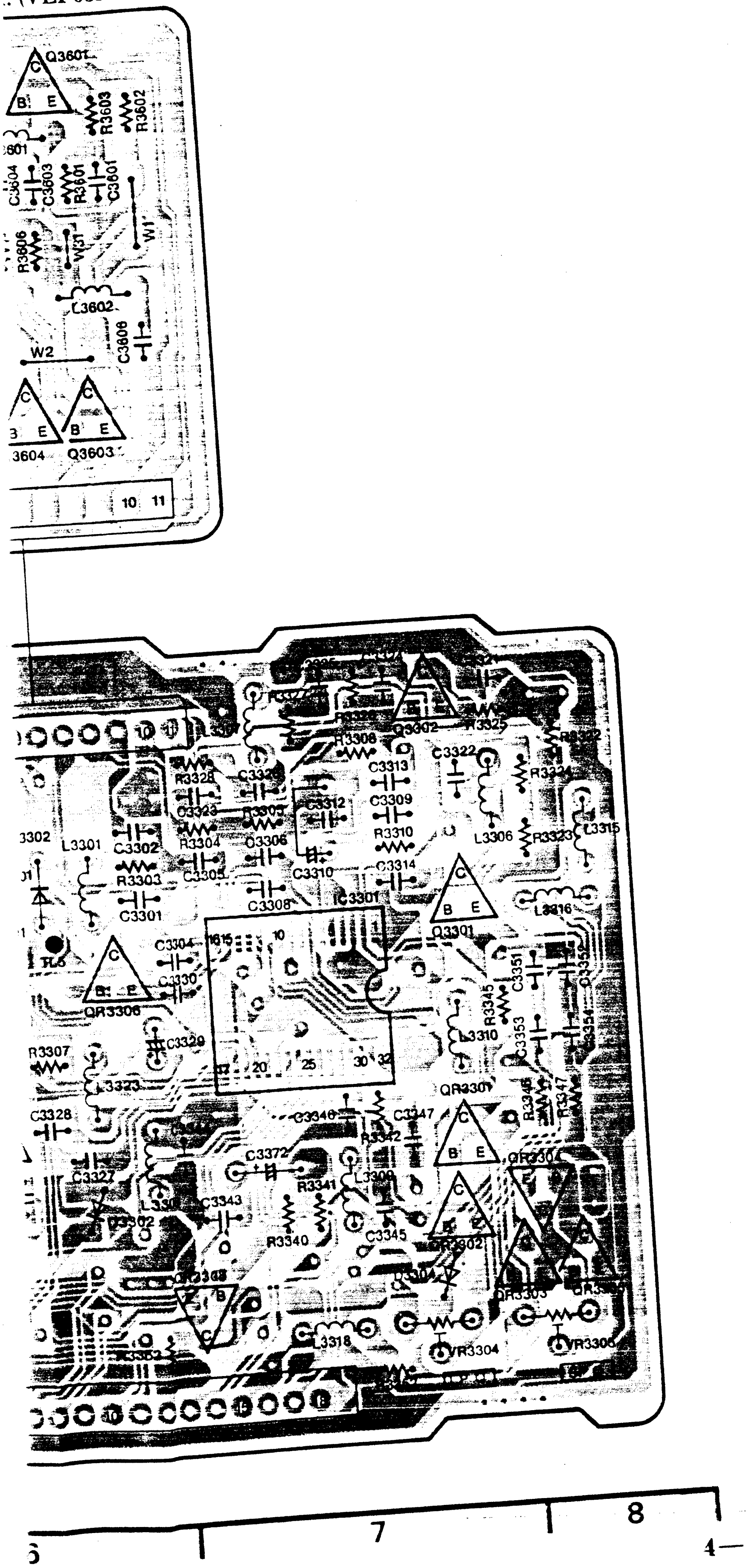
4-11. SUB LUMINANCE & CHROMINANCE PACK C.B.A. (VEP03A62A)


REC/RF AMP PACK C.B.A. (VEP03A90A)

SUB LUMINANCE & CHROMINANCE PACK C.B.A. (VEP03A62A)

E
D
C
B
A
1
2
3
4
5
6
IC3601
Q3601
C3608
FL3601
Q3604
Q3603
IC3503
L3508
C3533
C3534
C3515
Q3502
D3501
R3507
R3506
R3508
R3513
C3509
Q3501
C3512
R3504
C3504
IC3504
C3508
TL3
L3502
L3501
R3520
R3521
C3532
C3520
C3522
C3505
R3502
VCO
C3502
R3505
R3524
L3505
R3523
C3511
IC3508
C3530
Q3502
IC3501
R3525
L3504
D3504
C3503
R3522
C3510
C3523
C3531
R3515
R3519
R3501
C3513
C3521
C3529
C3527
C3526
C3528
R3518
R3511
C3517
C3516
R3517
C3525
R3510
X3501
R3509
IC3502
C3524
R3526
QR3501
PS3501
R3404
R3402
Q3401
C3402
R3427
R3426
R3425
IC3401
R3463
QR3405
IC3405
Q3406
Q8406
Q3425
C3425
Q8403
R3423
R3417
R3466
Q3410
Q3440
QR3412
C3409
Q3408
Q3409
C3449
C3450
L3415
Q3422
QR3411
C3408
QR3403
QR3410
PS3302
C3403
QR3408
QR3407
QR3409
QR3404
R3471
R3472
C3430
Q3407
R3413
R3420
C3429
IC3403
RX3401
C3474
C3301
D3401
PEAK
VR3307
C3328
C3301
C3304
C3302

.. (VEP03A90A)

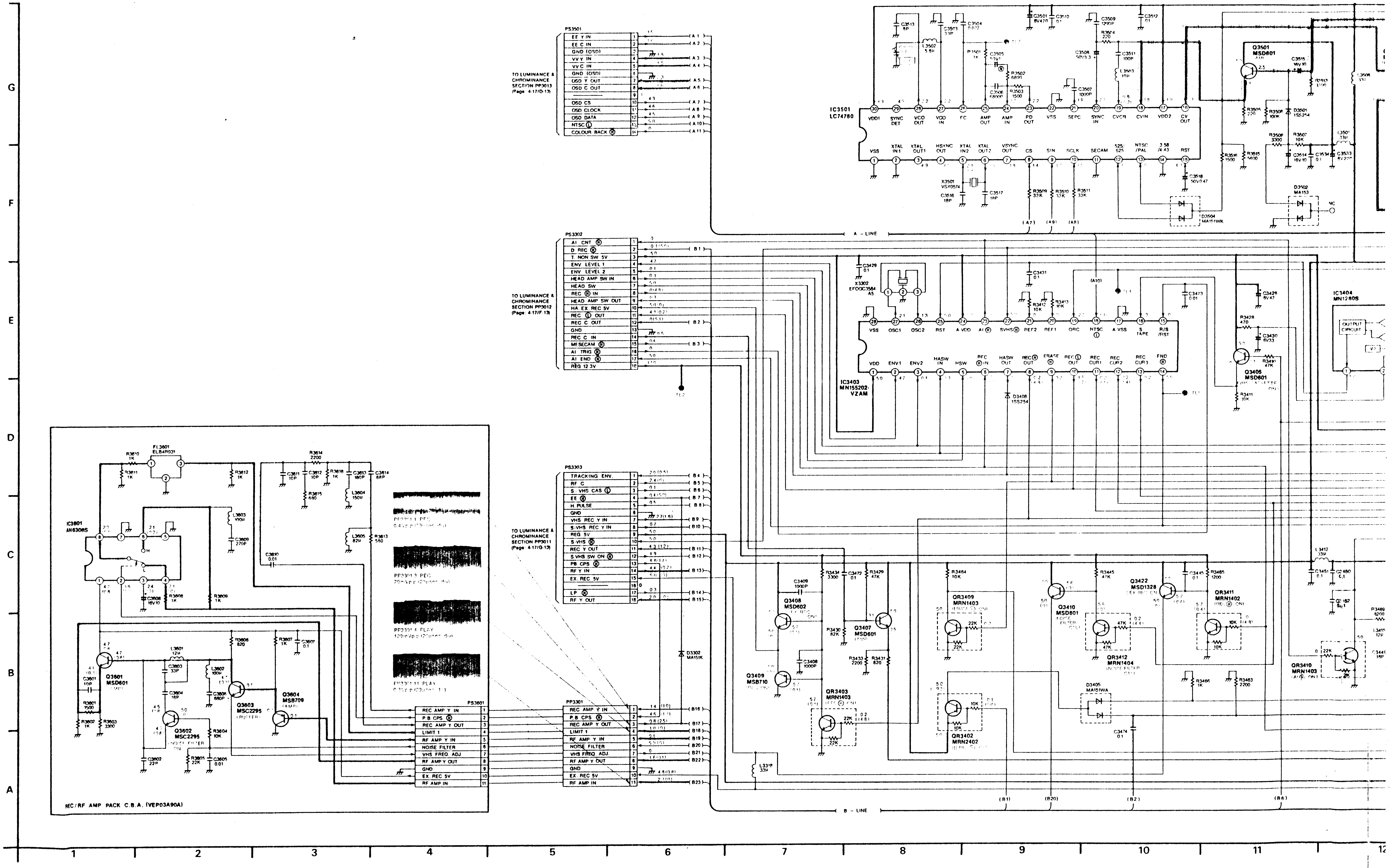

Q3601
C
B E
R3603
R3602
601
C3604
C3603
R3601
C3601
R3606
W31
W1
L3602
C3606
W2
3604
Q3603
10
11
L3301
C3302
R3303
C3301
R3328
C3323
R3304
C3305
C3306
C3308
C3312
C3310
R3308
C3313
C3309
R3310
C3314
IC3301
C3322
L3306
R3324
R3323
L3315
L3316
Q3302
R3325
Q3301
QR3306
C3304
C3330
C3329
R3307
L3323
C3328
C3327
L3310
R3345
C3351
C3353
C3352
C3354
QR3301
C3340
C3347
R3342
C3372
R3341
L3309
R3340
C3343
C3345
QR3302
QR3303
QR3305
QR3308
VR3302
L3318
VR3304
VR3305
TL6
3302
16
15
10
20
25
30
32
6
7
8

SUB LUMINANCE & CHROMINANCE PACK C.B.A.

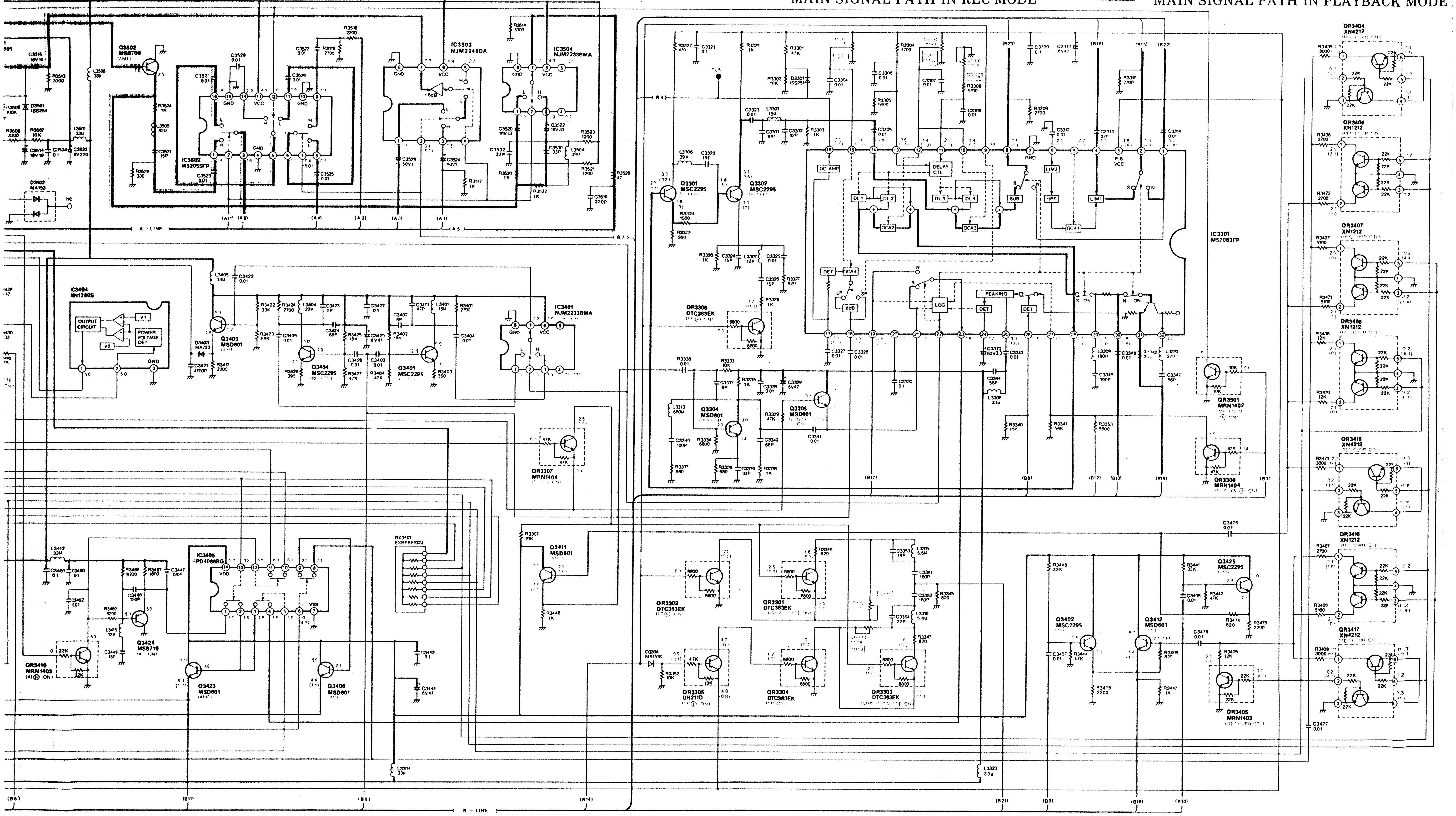
Transistor	
Q3301	B-7
Q3302	C-7
Q3304	A-6
Q3305	A-6
Q3401	C-3
Q3402	C-6
Q3403	B-3
Q3404	B-3
Q3405	B-5
Q3406	B-3
Q3407	B-5
Q3408	A-3
Q3409	A-3
Q3410	A-3
Q3411	B-6
Q3412	C-6
Q3422	A-3
Q3423	B-3
Q3424	A-3
Q3425	B-4
Q3501	C-1
Q3502	B-1
Q3601	E-6
Q3602	D-6
Q3603	D-6
Q3604	D-6
Transistor & Resistor	
QR3301	B-7
QR3302	A-7
QR3303	A-7
QR3304	A-8
QR3305	A-8
QR3306	B-6
QR3307	B-6
QR3308	A-7
QR3402	B-3
QR3403	A-3
QR3404	B-4
QR3405	B-5
QR3406	C-4
QR3407	C-4
QR3408	C-4
QR3409	B-4
QR3410	A-3
QR3411	A-3
QR3412	A-3
QR3415	C-5
QR3416	C-5
QR3417	C-5
QR3501	A-2
Integrated Circuit	
IC3301	B-7
IC3401	B-3
IC3403	B-4
IC3404	B-4
IC3405	B-3
IC3501	B-2
IC3502	A-1
IC3503	C-2
IC3504	B-1
IC3601	E-6
Adjustment	
C3502	B-2
VR3301	B-6
VR3302	A-5
VR3304	A-7
VR3305	A-8
VR3307	A-5
Connector	
PP3301	C-6
PS3302	A-3
PS3303	A-6
PS3501	A-1
PS3601	C-6

ADDRESS INFORMATION

4-12. SUB LUMINANCE & CHROMINANCE PACK SCHEMATIC DIAGRAM


PS3501
EE Y IN
EE C IN
GND (OSD)
VV Y IN
VV C IN
GND (OSD)
OSD Y OUT
OSD C OUT
OSD CS
OSD CLOCK
OSD DATA
NTSC Ⓛ
COLOUR BACK Ⓗ
TO LUMINANCE & CHROMINANCE SECTION PP3013 (Page 4-17/D-13)
IC3501 LC74780
VDD1
SYNC DET
VCO OUT
VDD IN
FC
AMP OUT
AMP IN
PD OUT
VSS
SEPC
SYNC IN
CVCR
CVIN
VDD2
CV OUT
VSS
XTAL IN1
XTAL OUT1
HSYNC OUT
XTAL IN2
XTAL OUT2
VSYNC OUT
CS
SIN
SCLK
SECAM
525/625
NTSC/PAL
3.58/4.43
RST
X3501 VSX0574
Q3501 MSD601
D3501 1SS254
D3502 MA153
D3504 MA151WK
A - LINE
PS3302
AI CNT Ⓗ
D REC Ⓗ
T. NON SW 5V
ENV LEVEL 1
ENV LEVEL 2
HEAD AMP SW IN
HEAD SW
REC Ⓗ IN
HEAD AMP SW OUT
HA EX REC 5V
REC Ⓛ OUT
REC C OUT
GND
REC C IN
MESECAM Ⓗ
AI TRIG Ⓗ
AI END Ⓗ
REG 12 3V
TO LUMINANCE & CHROMINANCE SECTION PP3012 (Page 4-17/F-13)
X3302 EFOGC3584A5
IC3403 MN15S202-VZAM
VSS
OSC1
OSC2
RST
A VDD
AI Ⓗ
SVHS Ⓗ
REF2
REF1
ORC
NTSC Ⓛ
A VSS
S TAPE
R/S /FST
VDD
ENV1
ENV2
HASW IN
HSW
REC Ⓗ IN
HASW OUT
REC Ⓗ OUT
ERASE Ⓗ
REC Ⓛ OUT
REC CUR1
REC CUR2
REC CUR3
FND Ⓗ
D3408 1SS254
Q3405 MSD601
IC3404 MN1280S
OUTPUT CIRCUIT
PS3303
TRACKING ENV.
RF C
S-VHS CAS Ⓛ
EE Ⓗ
H. PULSE
GND
VHS REC Y IN
S-VHS REC Y IN
REG 5V
S-VHS Ⓗ
REC Y OUT
S-VHS SW ON Ⓗ
PB CPS Ⓗ
RF Y IN
EX. REC 5V
LP Ⓗ
RF Y OUT
TO LUMINANCE & CHROMINANCE SECTION PP3011 (Page 4-17/G-13)
D3302 MA151K
IC3601 AN6308S
FL3601 ELB4R031
Q3601 MSD601
Q3602 MSC2295
Q3603 MSC2295
Q3604 MSB709
PP3011-1 REC 0.4Vp-p (2Vsec. div)
PP3013 REC 70mVp-p (2Vsec. div)
PP3011-4 PLAY 120mVp-p (20Vsec. div)
PP3011-11 PLAY 0.7Vp-p (20Vsec. div)
PS3601
PP3301
REC AMP Y IN
P.B CPS Ⓗ
REC AMP Y OUT
LIMIT 1
RF AMP Y IN
NOISE FILTER
VHS FREQ. ADJ
RF AMP Y OUT
GND
EX. REC 5V
RF AMP IN
REC/RF AMP PACK C.B.A. (VEP03A90A)
Q3408 MSD602
Q3409 MSB710
Q3407 MSD601
QR3403 MRN1403
QR3409 MRN1403
QR3402 MRN2402
Q3410 MSD601
QR3412 MRN1404
Q3422 MSD1328
QR3411 MRN1402
QR3410 MRN1403
D3405 MA151WA
L3318 33H
B - LINE
(B1)
(B20)
(B2)
(B6)
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12

MAIN SIGNAL PATH IN REC MODE ——— MAIN SIGNAL PATH IN PLAYBACK MODE

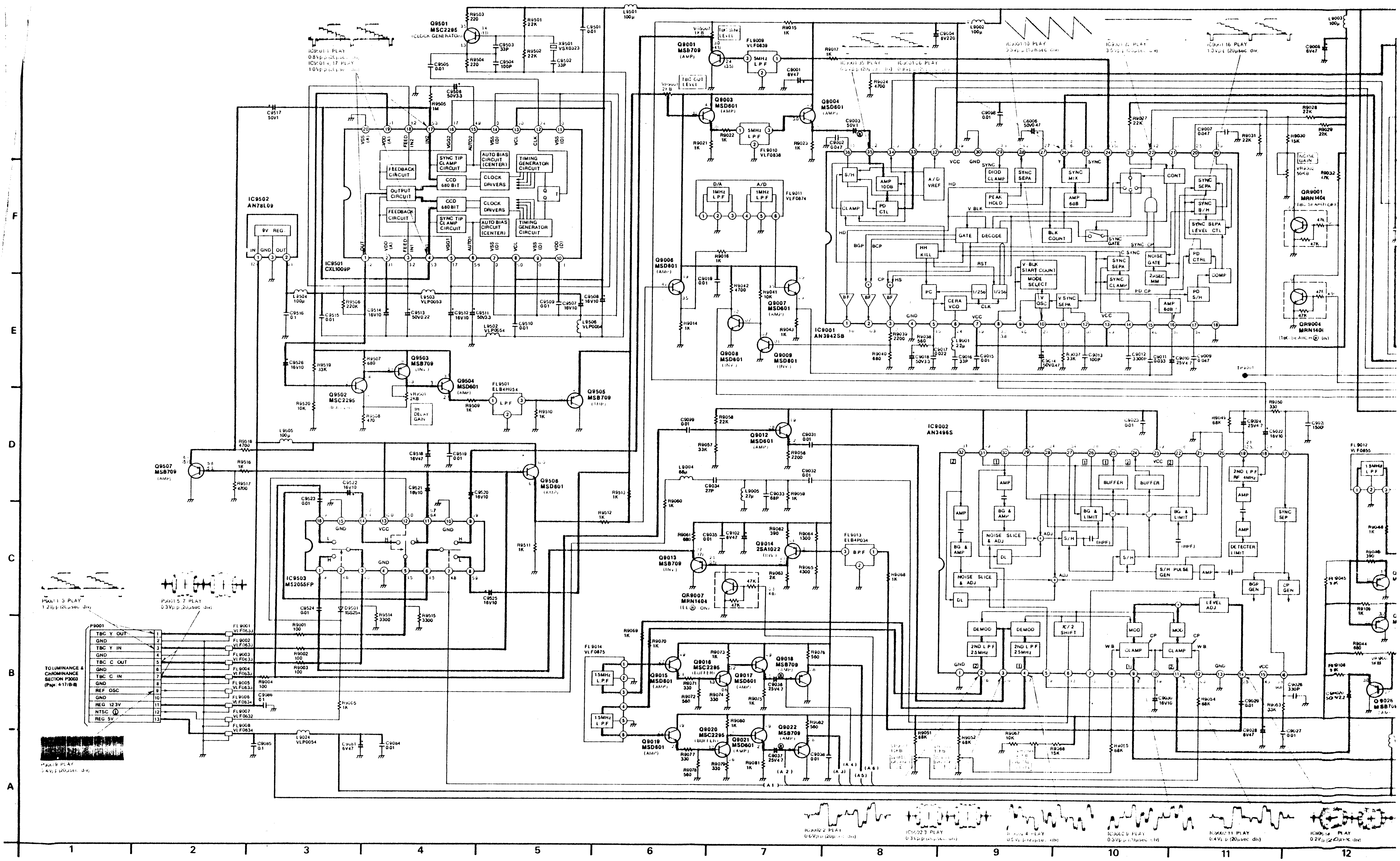

IC3502 M52055FP
IC3503 NJM2246DA
IC3504 NJM2233BMA
IC3404 MN1280S
IC3401 NJM2233BMA
IC3301 M52063FP
IC3405 µPD4066BG
Rx3401 EXBF8E102J
Q3502 MSB709
Q3403 MSD601
Q3404 MSC2295
Q3401 MSC2295
Q3301 MSC2295
Q3302 MSC2295
Q3304 MSD601
Q3305 MSD601
Q3411 MSD601
Q3423 MSD601
Q3406 MSD601
Q3424 MSB710
Q3402 MSC2295
Q3412 MSD601
Q3425 MSC2295
QR3306 DTC363EK
QR3302 DTC363EK
QR3301 DTC363EK
QR3305 UN211D
QR3304 DTC363EK
QR3303 DTC363EK
QR3307 MRN1404
QR3410 MRN1403
QR3501 MRN1402
QR3308 MRN1404
QR3405 MRN1403
QR3404 XN4212
QR3406 XN1212
QR3407 XN1212
QR3408 XN1212
QR3415 XN4212
QR3416 XN1212
QR3417 XN4212
DC AMP
DELAY CTL
DL1
DL2
DL3
DL4
GCA1
GCA2
GCA3
GCA4
LIM1
LIM2
HPF
6dB
DET
LOG
PEAKING
OUTPUT CIRCUIT
POWER VOLTAGE DET
A - LINE
B - LINE

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE) THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

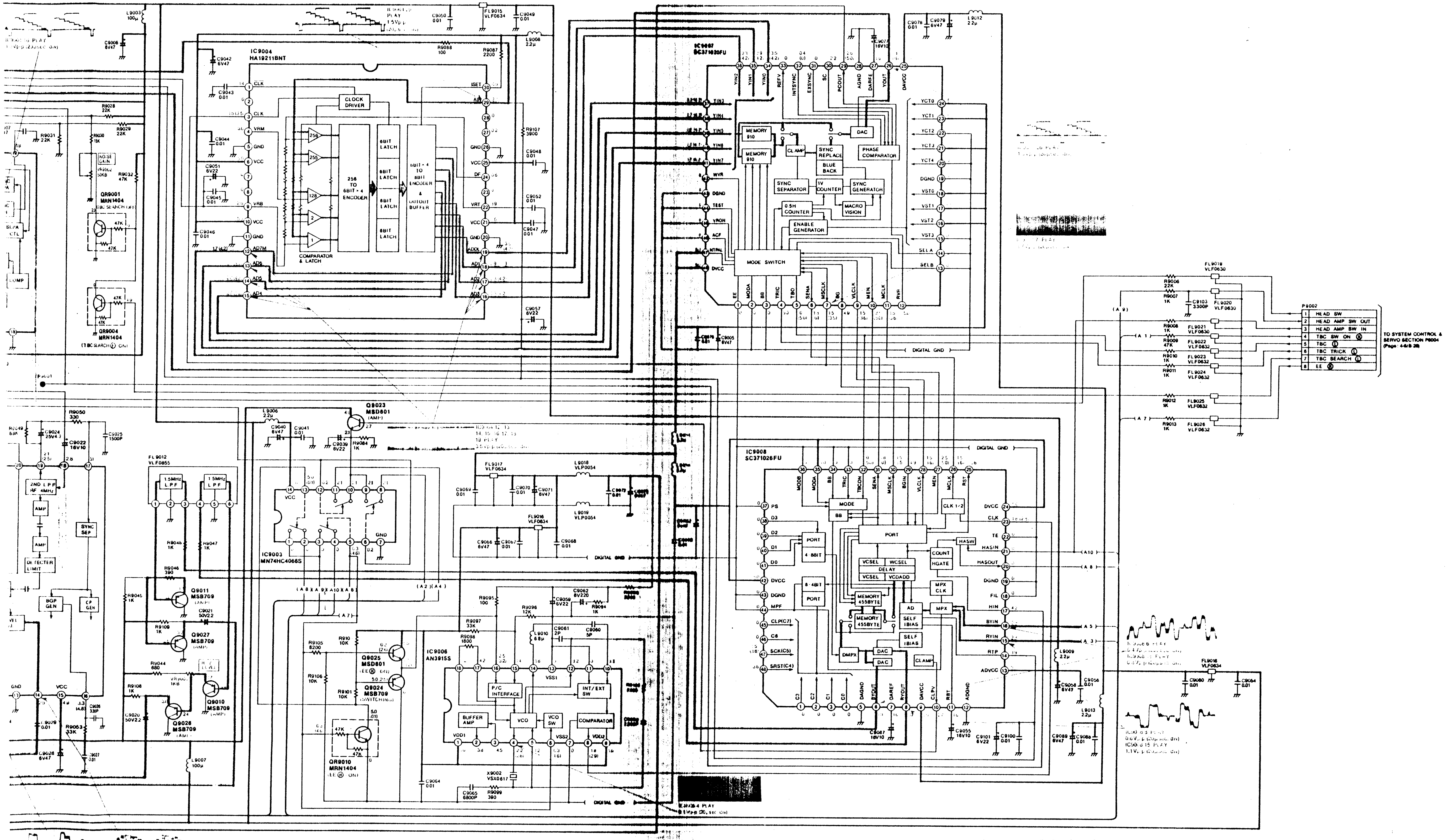
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

12 13 14 15 16 17 18 19 20 21 22 23

13. TBC SCHEMATIC DIAGRAM


Q9501 MSC2295 (CLOCK GENERATOR)
IC9501 CXL1009P
IC9502 AN78L09
9V REG
IN GND OUT
FEEDBACK CIRCUIT
OUTPUT CIRCUIT
SYNC TIP CLAMP CIRCUIT
CCD 680 BIT
AUTO BIAS CIRCUIT (CENTER)
CLOCK DRIVERS
TIMING GENERATOR CIRCUIT
Q9502 MSC2295
Q9503 MSB709 (INV)
Q9504 MSD601 (AMP)
Q9505 MSB709
FL9501 ELB4H054
L.P.F
1H DELAY GAIN
Q9506 MSD601 (AMP)
Q9507 MSB709 (AMP)
IC9503 M52055FP
GND
VCC
Q9001 MSB709 (AMP)
Q9003 MSD601 (AMP)
Q9004 MSD601 (AMP)
FL9009 VLF0839
FL9010 VLF0838
FL9011 VLF0874
5MHz L.P.F
1MHz L.P.F
D/A
A/D
TBC OUT LEVEL
Q9006 MSD601 (AMP)
Q9007 MSD601 (AMP)
Q9008 MSD601 (INV)
Q9009 MSD601 (INV)
IC9001 AN3942SB
S/H
AMP 10DB
A/D VREF
PEAK HOLD
PD CTL
CLAMP
DIOD CLAMP
SYNC SEPA
SYNC MIX
AMP 6dB
GATE
DECODE
BLK COUNT
HH KILL
PC
CERA VCO
1/256
V BLK START COUNT
MODE SELECT
V OSC
V SYNC SEPA
SYNC GATE
NOISE GATE
2μSEC MM
PD CTRL
COMP
PD S/H
SYNC S/H
SYNC SEPA LEVEL CTL
CONT
QR9001 MRN1404 (TBC SEARCH OFF)
QR9004 MRN1404 (TBC SEARCH ON)
NOISE GAIN
Q9012 MSD601 (AMP)
Q9013 MSB709 (INV)
Q9014 2SA1022 (INV)
QR9007 MRN1404 (EE ON)
FL9013 ELB4P034
B.P.F
Q9015 MSD601 (AMP)
Q9016 MSC2295 (BUFFER)
Q9017 MSD601 (AMP)
Q9018 MSB709 (AMP)
Q9019 MSD601 (AMP)
Q9020 MSC2295 (BUFFER)
Q9021 MSD601 (AMP)
Q9022 MSB709 (AMP)
FL9014 VLF0875
1.5MHz L.P.F
IC9002 AN3496S
AMP
BG & AMP
NOISE SLICE & ADJ
DL
BUFFER
BG & LIMIT
S/H
S/H PULSE GEN
DEMOD
2ND L.P.F 2.5MHz
π/2 SHIFT
MOD
CLAMP
LEVEL ADJ
2ND L.P.F RF 4MHz
DETECTER LIMIT
SYNC SEP
BGP GEN
CP GEN
Q9026 MSB709
P9001
TBC Y OUT
GND
TBC Y IN
GND
TBC C OUT
GND
TBC C IN
GND
REF OSC
GND
REG 12.3V
NTSC
REG 5V
TO LUMINANCE & CHROMINANCE SECTION P3003 (Page 4-17/B-8)
A
B
C
D
E
F
1
2
3
4
5
6
7
8
9
10
11
12

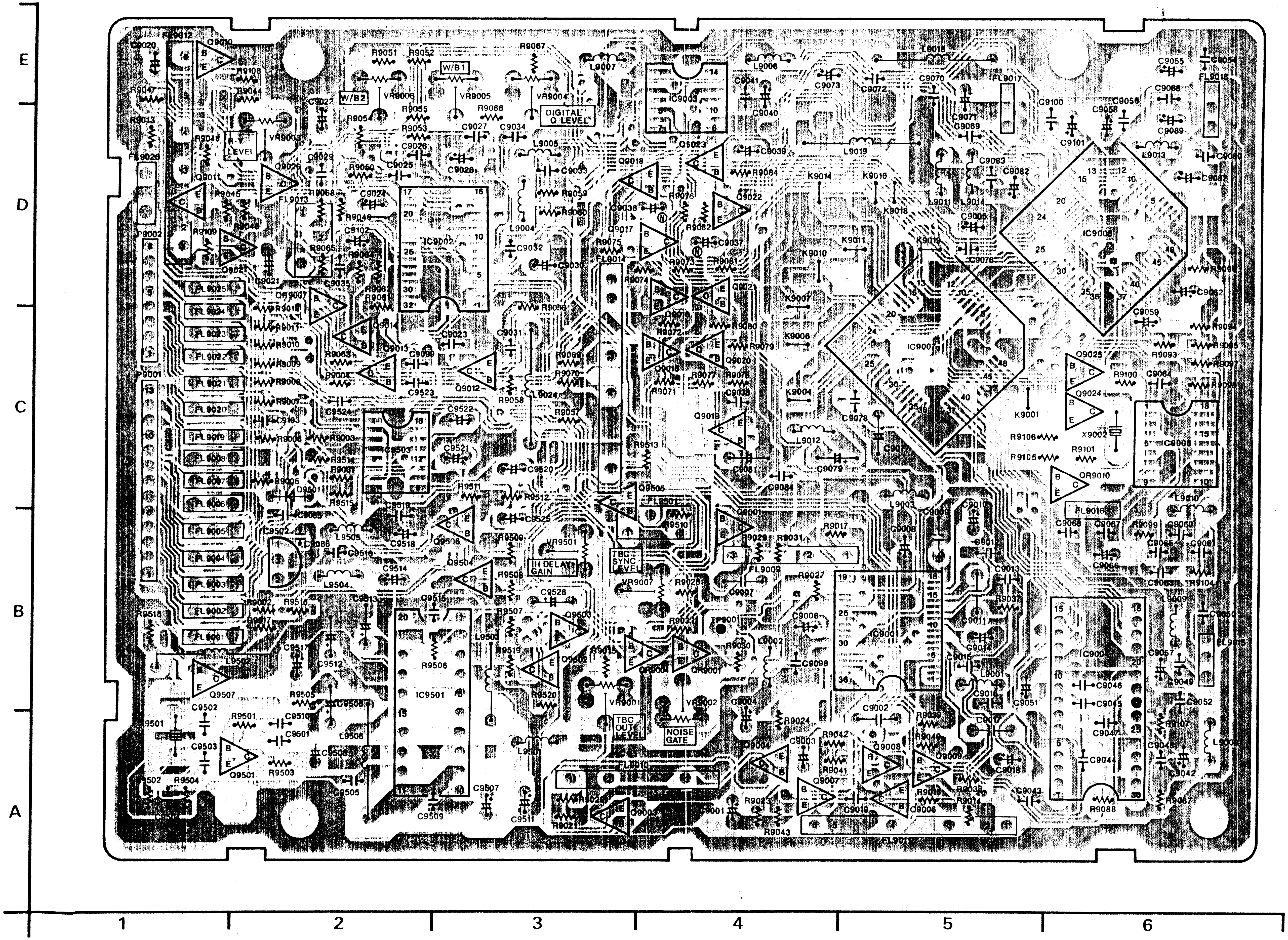
MAIN SIGNAL PATH IN PLAYBACK MODE


IC9004
HA19211BNT
CLOCK DRIVER
256 TO 6BIT × 4 ENCODER
6BIT LATCH
6BIT × 4 TO 8BIT ENCODER & OUTPUT BUFFER
COMPARATOR & LATCH
IC9007
SC371020FU
MEMORY 910
CLAMP
SYNC REPLACE
BLUE BACK
DAC
PHASE COMPARATOR
SYNC SEPARATOR
1V COUNTER
SYNC GENERATOR
0.5H COUNTER
MACRO VISION
ENABLE GENERATOR
MODE SWITCH
DIGITAL GND
P9002
HEAD SW
HEAD AMP SW OUT
HEAD AMP SW IN
TBC SW ON
TBC
TBC TRICK
TBC SEARCH
EE
TO SYSTEM CONTROL & SERVO SECTION P6004
Q9023 MSD601 (AMP)
IC9003 MN74HC4066S
FL9012 VLF0855
1.5MHz L.P.F
Q9011 MSB709 (AMP)
Q9027 MSB709 (AMP)
Q9010 MSB709 (AMP)
Q9026 MSB709 (AMP)
QR9001 MRN1404
QR9004 MRN1404
2ND L.P.F 4MHz
AMP
DETECTER LIMIT
SYNC SEP
BGP GEN
CP GEN
Q9025 MSD601
Q9024 MSB709 (SWITCHING)
QR9010 MRN1404
IC9006 AN3915S
P/C INTERFACE
INT/EXT SW
BUFFER AMP
VCO
VCO SW
COMPARATOR
X9002 VSX0617
IC9008 SC371026FU
MODE
PORT
4-8BIT
8-4BIT
CLK 1/2
COUNT
HGATE
HASW
VCSEL
DELAY
VCDADD
MEMORY 455BYTE
MPX CLK
AD
MPX
SELF IBIAS
DMPX
DAC
CLAMP
11
12
13
14
15
16
17
18
19
20
21
22

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE) (TBC SW, ON)
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE) (TBC SW, ON)

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

4-14. TBC C.B.A. (VEP03A53A)


E
D
C
B
A
1
2
3
4
5
6
W/B2
W/B1
DIGITAL 0 LEVEL
R LEVEL
TBC SYNC LEVEL
H DELAY GAIN
TBC OUT LEVEL
NOISE GATE
IC9001
IC9002
IC9003
IC9004
IC9006
IC9007
IC9008
IC9501
TP9001
P9001
P9002
VR9001
VR9002
VR9003
VR9004
VR9005
VR9006
VR9007
VR9501
X9002

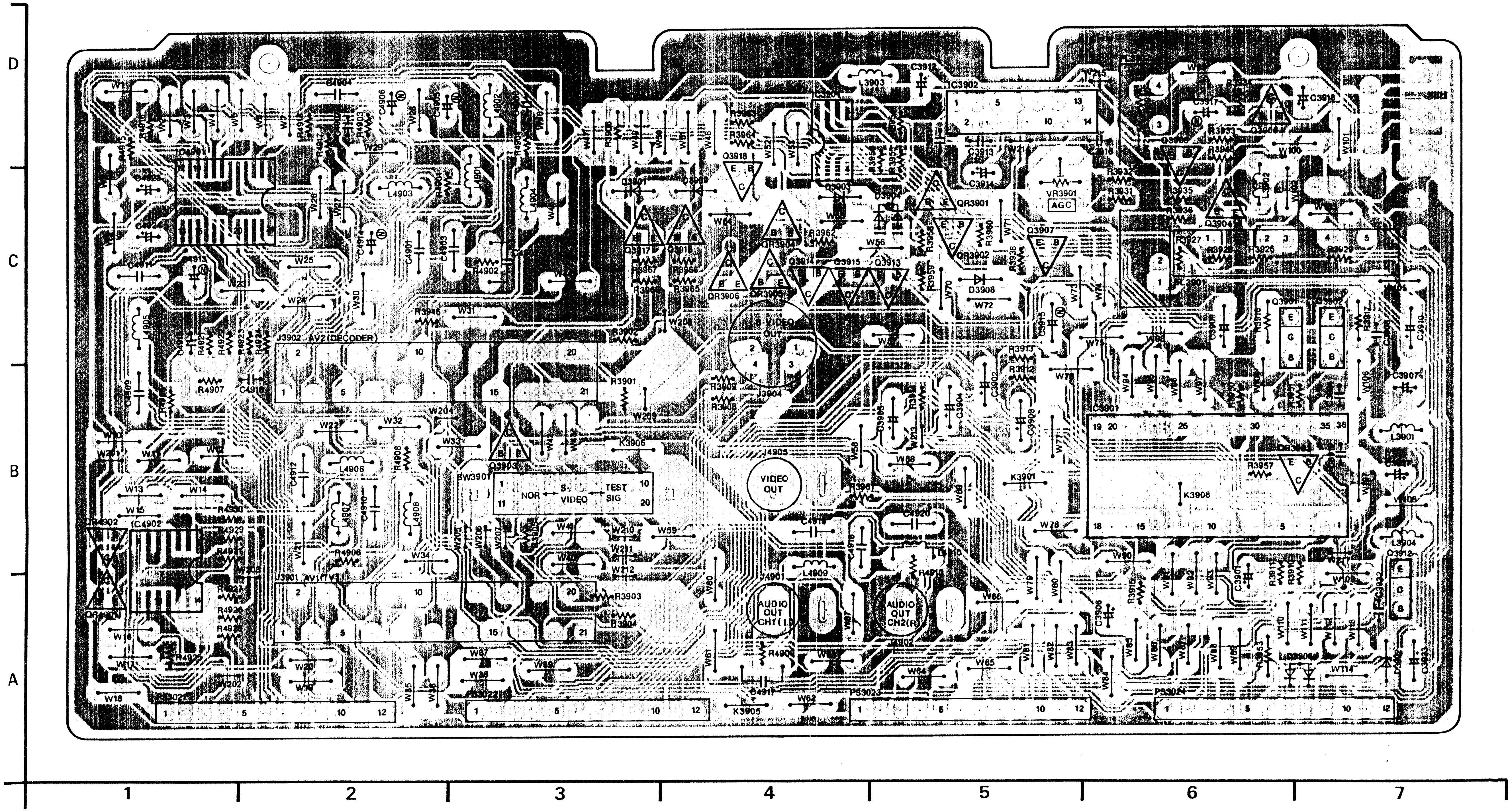
TBC C.B.A.	
Transistor	
Q9001	B·4
Q9003	A·3
Q9004	A·4
Q9006	A·5
Q9007	A·4
Q9008	A·5
Q9009	A·5
Q9010	E·1
Q9011	D·1
Q9012	C·3
Q9013	C·2
Q9014	C·2
Q9015	C·4
Q9016	D·4
Q9017	D·4
Q9018	D·3
Q9019	C·4
Q9020	C·4
Q9021	D·4
Q9022	D·4
Q9023	D·4
Q9024	C·6
Q9025	C·6
Q9026	D·2
Q9027	D·2
Q9501	A·2
Q9502	B·3
Q9503	B·3
Q9504	B·3
Q9505	C·3
Q9506	B·3
Q9507	B·1
Transistor & Resistor	
QR9001	B·4
QR9004	B·4
QR9007	D·2
QR9010	C·6
Integrated Circuit	
IC9001	B·5
IC9002	D·3
IC9003	E·4
IC9004	B·6
IC9006	C·6
IC9007	C·5
IC9008	D·6
IC9501	B·2
IC9502	B·2
IC9503	C·2
Test Point	
TP9001	B·4
Adjustment	
VR9001	B·3
VR9002	B·4
VR9003	D·2
VR9004	E·3
VR9005	E·3
VR9006	E·2
VR9007	B·4
VR9501	B·3
Connector	
P9001	C·1
P9002	D·1

ADDRESS INFORMATION

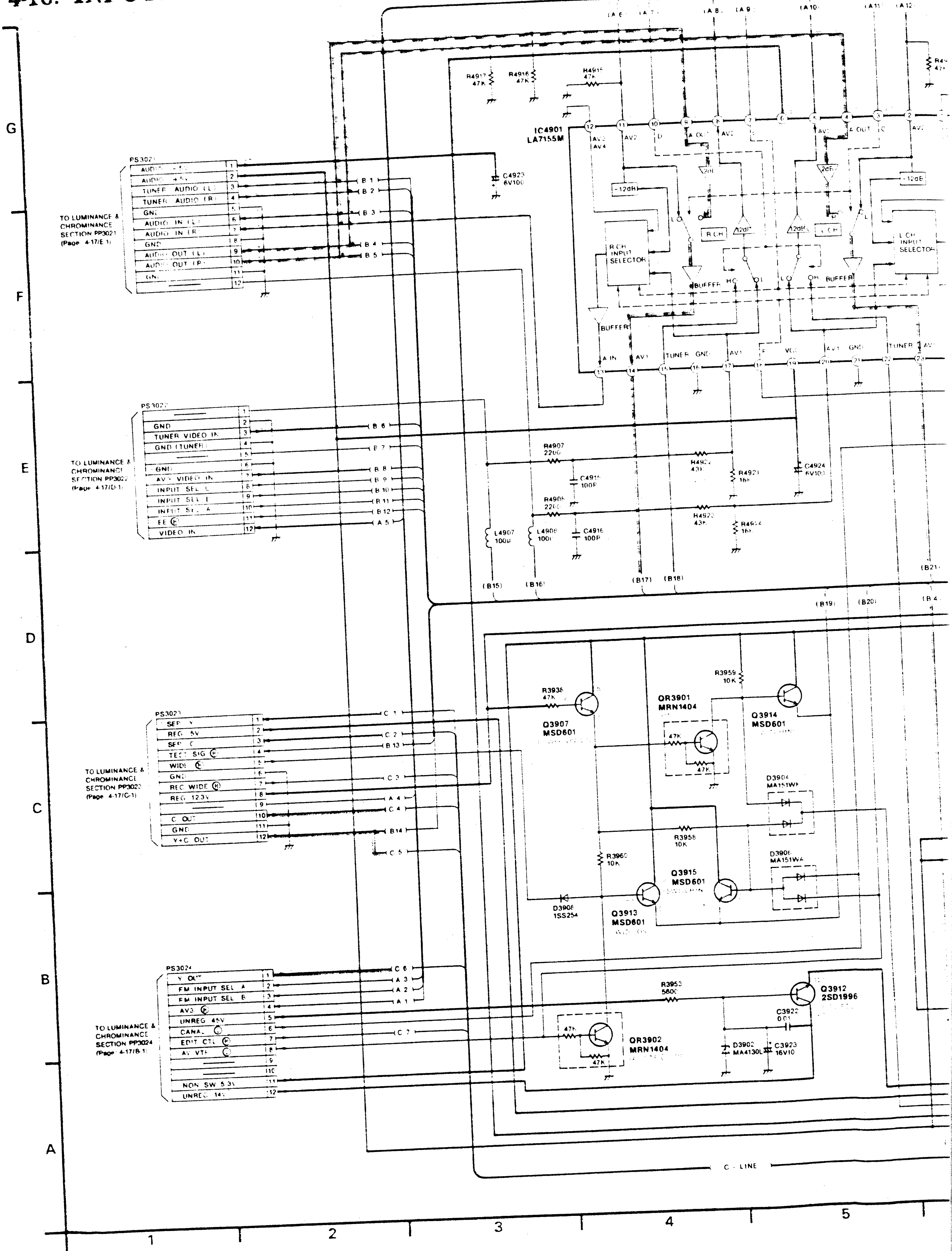
4-15. INPUT/OUTPUT PACK C.B.A. (VEP03A72A)

INPUT/OUTPUT PACK C.B.A.					
Transistor		**nsistor & Resistor**		**Adjustment**	
Q3901	C-6	QR3901	C-5	VR3901	C-5
Q3902	C-7	QR3902	C-5	**Connector**	
Q3903	B-3	QR3903	B-7		
Q3904	C-6	QR3904	C-4	PS3021	A-1
Q3905	D-6	QR3905	C-4	PS3022	A-3
Q3906	D-6	QR3906	C-4	PS3023	A-5
Q3907	C-5	QR4901	A-1	PS3024	A-6
Q3912	B-7	QR4902	B-1		
Q3913	C-5	**Integrated Circuit**			
Q3914	C-4				
Q3915	C-4	IC3901	B-6		
Q3916	C-4	IC3902	D-5		
Q3917	C-3	IC3904	D-4		
Q3918	C-4	IC4901	C-1		
		IC4902	B-1		

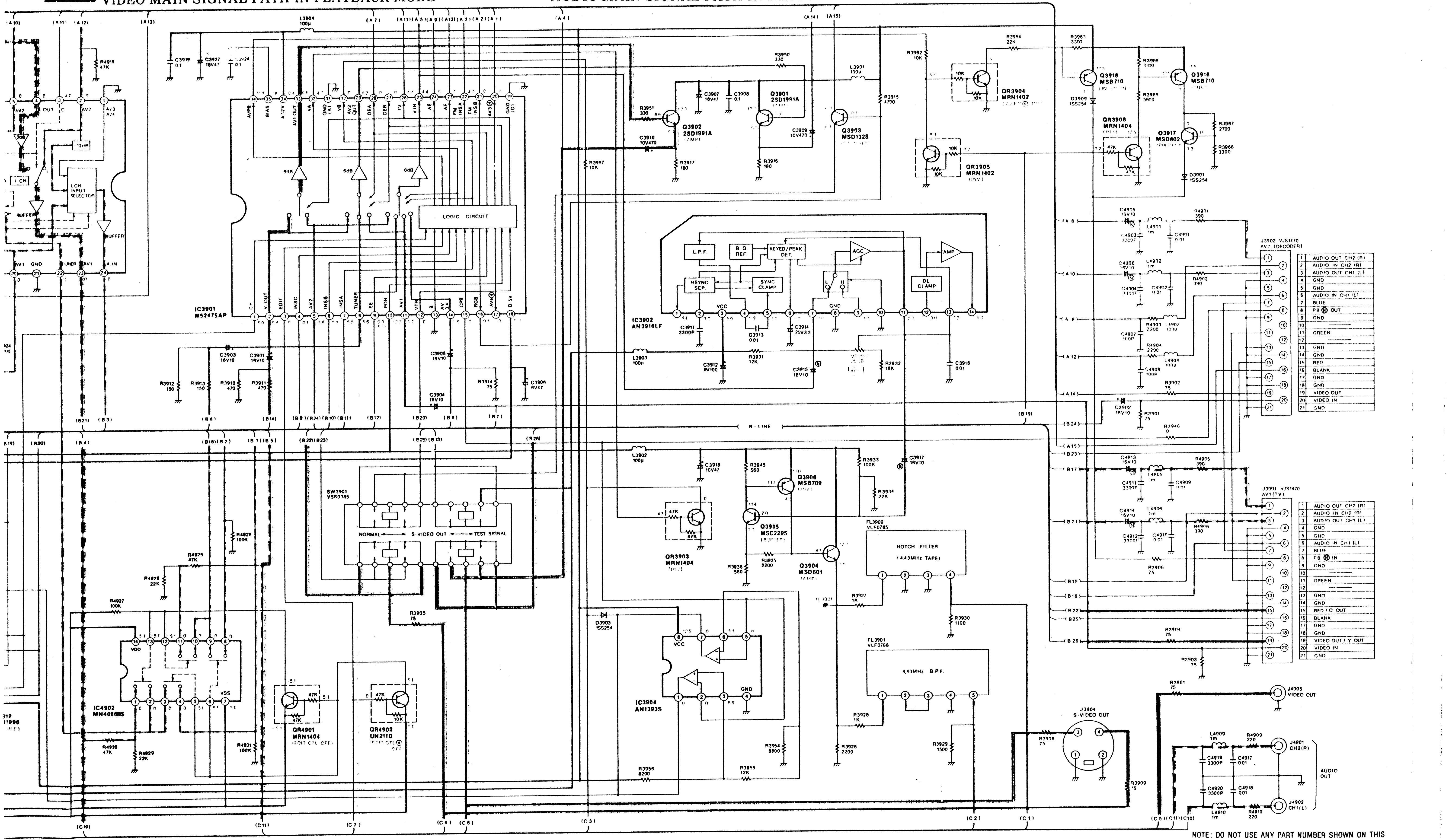
ADDRESS INFORMATION


D
C
B
A
1
2
3
4
5
6
7
J3902 AV2 (DECODER)
J3901 AV1 (TV)
SW3901
NOR
S-VIDEO
TEST SIG
S-VIDEO OUT
VIDEO OUT
AUDIO OUT CH1 (L)
AUDIO OUT CH2 (R)
VR3901
AGC
IC3902
IC3901
IC4902
PS3021
PS3022
PS3023
PS3024
K3905
K3906
K3908
J4905
J4901
J4902
QR3901
QR3902
QR3903
QR3904
QR3905
QR3906
QR4902
QR4901
Q3901
Q3902
Q3903
Q3904
Q3905
Q3906
Q3907
Q3912
Q3913
Q3915
Q3917
Q3918
L3901
L3903
L3904
L4903
L4905
L4906
L4907
L4908
L4909
D3908
R3901
R3902
R3903
R3904
R3957
R4902
R4907
R4910
C3901
C3907
C3910
C3913
C3914
C3915
C3916
C3918
C3920
C4901
C4903
C4906
C4910
C4911
C4912
C4916
C4920

4-16. INPUT/OUTPUT PACK SCHEMATIC DIAGRAM


IC4901
LA7155M
R4917 47K
R4916 47K
R4915 47K
C4923 6V100
PS3021
AUDIO +5V
TUNER AUDIO (L)
TUNER AUDIO (R)
GND
AUDIO IN (L)
AUDIO IN (R)
AUDIO OUT (L)
AUDIO OUT (R)
TO LUMINANCE & CHROMINANCE SECTION PP3021 (Page 4-17/E-1)
R CH INPUT SELECTOR
L CH INPUT SELECTOR
BUFFER
-12dB
R CH
L CH
A IN
AV1
TUNER
GND
VCC
PS3022
TUNER VIDEO IN
GND (TUNER)
AV1 VIDEO IN
INPUT SEL C
INPUT SEL B
INPUT SEL A
EE
VIDEO IN
TO LUMINANCE & CHROMINANCE SECTION PP3022 (Page 4-17/D-1)
R4907 220
R4908 220
C4915 100P
C4916 100P
R4922 43K
R4923 43K
R4921 16K
R4924 16K
C4924 6V100
L4907 100μ
L4908 100μ
PS3023
SEP Y
REG 5V
SEP C
TEST SIG
WIDE
GND
REC WIDE
REG 12.3V
C OUT
Y+C OUT
TO LUMINANCE & CHROMINANCE SECTION PP3023 (Page 4-17/C-1)
R3938 47K
Q3907 MSD601
QR3901 MRN1404
R3959 10K
Q3914 MSD601
D3904 MA151WK
R3958 10K
R3960 10K
D3906 MA151WA
Q3915 MSD601
D3908 1SS254
Q3913 MSD601
PS3024
Y OUT
FM INPUT SEL A
FM INPUT SEL B
AV3
UNREG 45V
CANAL
EDIT CTL
AV VTR
NON SW 5.3V
UNREG 14V
TO LUMINANCE & CHROMINANCE SECTION PP3024 (Page 4-17/B-1)
R3953 5600
Q3912 2SD1996
C3922 0.01
QR3902 MRN1404
D3902 MA4130L
C3923 16V10
C LINE
G
F
E
D
C
B
A
1
2
3
4
5

VIDEO MAIN SIGNAL PATH IN REC MODE
VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
AUDIO MAIN SIGNAL PATH IN REC MODE
AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE


IC3901 M52475AP
LOGIC CIRCUIT
LCH INPUT SELECTOR
BUFFER
IC3902 AN3918LF
L.P.F.
B.G REF.
KEYED/PEAK DET
AGC
AMP
HSYNC SEP.
SYNC CLAMP
DL CLAMP
Q3902 2SD1991A
Q3901 2SD1991A
Q3903 MSD1328
QR3904 MRN1402
QR3905 MRN1402
Q3918 MSB710
Q3916 MSB710
QR3906 MRN1404
Q3917 MSD602
SW3901 VSS0385
NORMAL
S-VIDEO OUT
TEST SIGNAL
B-LINE
QR3903 MRN1404
Q3906 MSB709
Q3905 MSC2295
Q3904 MSD601
FL3902 VLF0765
NOTCH FILTER (4.43MHz TAPE)
FL3901 VLF0766
4.43MHz B.P.F.
IC3904 AN1393S
IC4902 MN4066BS
QR4901 MRN1404
QR4902 UN211D
J3904 S VIDEO OUT
J4905 VIDEO OUT
J4901 CH2(R)
J4902 CH1(L)
AUDIO OUT
J3902 VJS1470 AV2 (DECODER)
1 AUDIO OUT CH2 (R)
2 AUDIO IN CH2 (R)
3 AUDIO OUT CH1 (L)
4 GND
5 GND
6 AUDIO IN CH1 (L)
7 BLUE
8 PB Ⓝ OUT
9 GND
10
11 GREEN
12
13 GND
14 GND
15 RED
16 BLANK
17 GND
18 GND
19 VIDEO OUT
20 VIDEO IN
21 GND
J3901 VJS1470 AV1 (TV)
1 AUDIO OUT CH2 (R)
2 AUDIO IN CH2 (R)
3 AUDIO OUT CH1 (L)
4 GND
5 GND
6 AUDIO IN CH1 (L)
7 BLUE
8 PB Ⓝ IN
9 GND
10
11 GREEN
12
13 GND
14 GND
15 RED / C OUT
16 BLANK
17 GND
18 GND
19 VIDEO OUT / Y OUT
20 VIDEO IN
21 GND

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

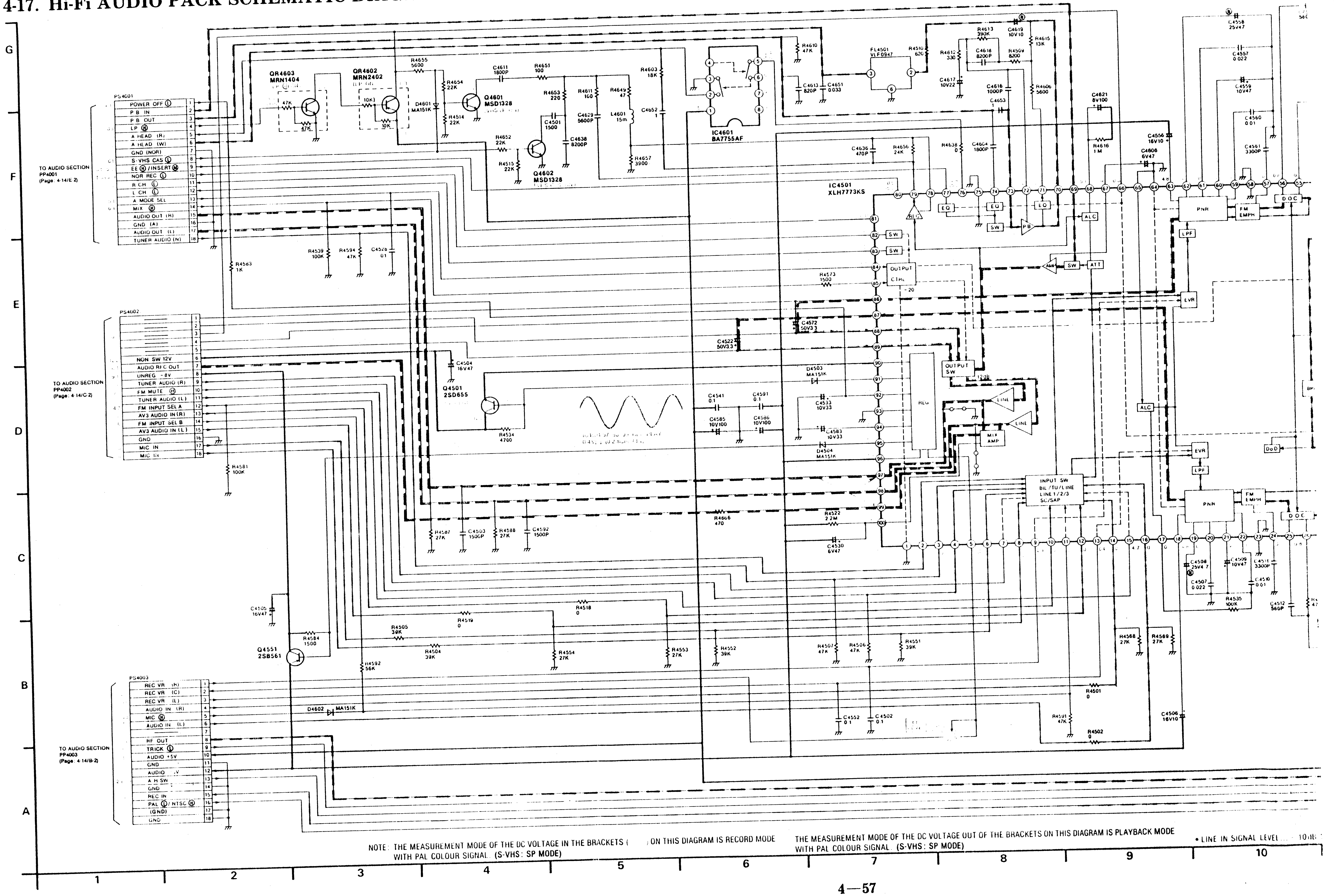
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

5 6 7 8 9 10 11 12 13 14 15 16

4-17. Hi-Fi AUDIO PACK SCHEMATIC DIAGRAM

MAIN SIGNAL PATH IN REC MODE

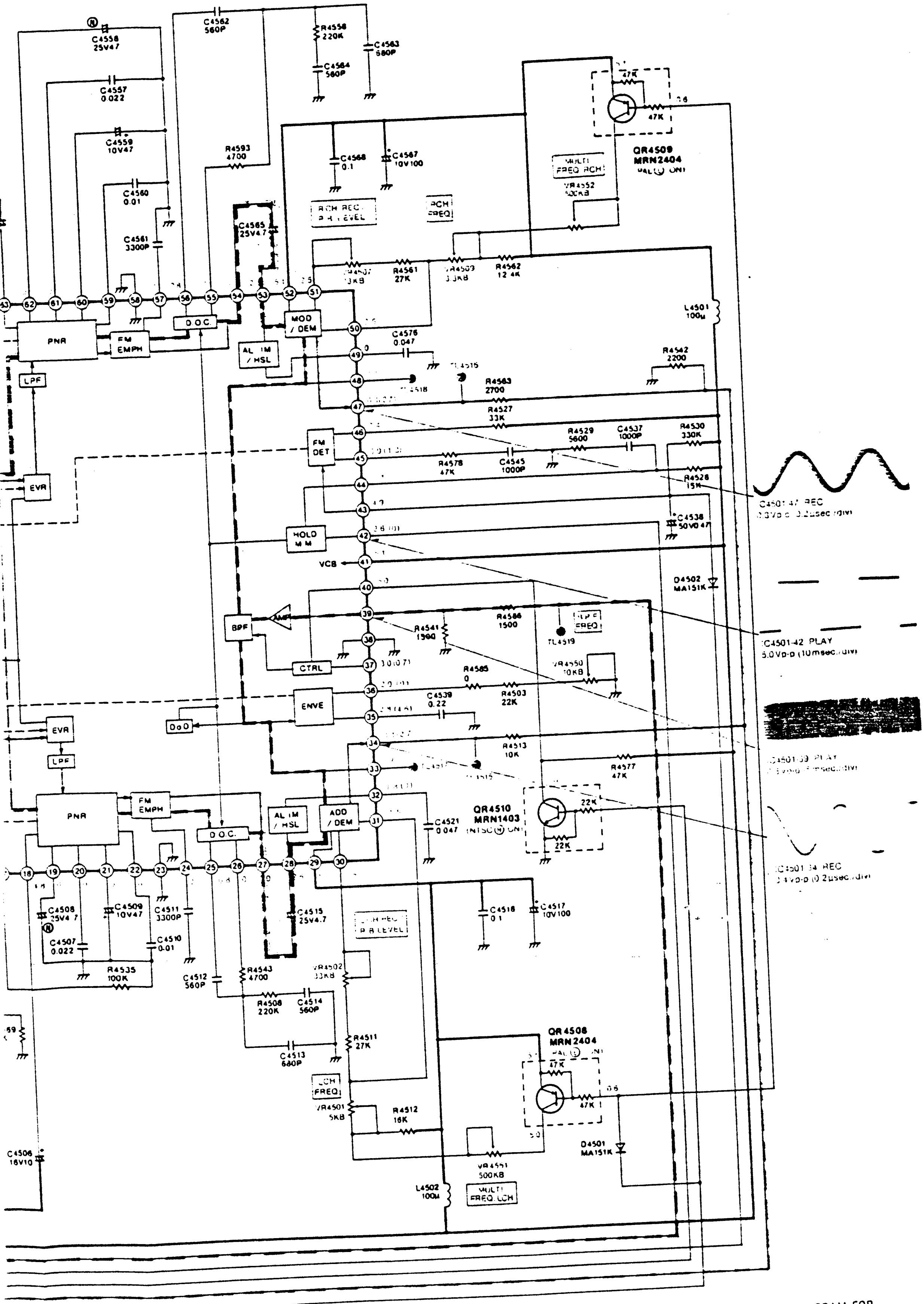

G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
PS4001
POWER OFF Ⓛ
P B IN
P B OUT
LP Ⓗ
A HEAD (R)
A HLAD (W)
GND (NOR)
S-VHS CAS Ⓛ
EE Ⓗ /INSERT Ⓜ
NOR REC Ⓛ
R CH Ⓛ
L CH Ⓛ
A MODE SEL
MIX Ⓗ
AUDIO OUT (R)
GND (A)
AUDIO OUT (L)
TUNER AUDIO (N)
TO AUDIO SECTION
PP4001
(Page: 4-14/E-2)
PS4002
NON SW 12V
AUDIO REC OUT
UNREG -8V
TUNER AUDIO (R)
FM MUTE Ⓗ
TUNER AUDIO (L)
FM INPUT SEL A
AV3 AUDIO IN (R)
FM INPUT SEL B
AV3 AUDIO IN (L)
GND
MIC IN
MIC IN
TO AUDIO SECTION
PP4002
(Page: 4-14/C-2)
PS4003
REC VR (R)
REC VR (C)
REC VR (L)
AUDIO IN (R)
MIC Ⓗ
AUDIO IN (L)
RF OUT
TRICK Ⓛ
AUDIO +5V
GND
AUDIO +5V
A H SW
GND
REC IN
PAL Ⓛ/ NTSC Ⓗ
(GND)
GND
TO AUDIO SECTION
PP4003
(Page: 4-14/B-2)
QR4603
MRN1404
QR4602
MRN2402
Q4601
MSD1328
Q4602
MSD1328
Q4501
2SD655
Q4551
2SB561
D4601
MA151K
D4602 MA151K
D4503
MA151K
D4504
MA151K
IC4601
BA7755AF
IC4501
XLH7773KS
FL4501
VLF0947
L4601
15m
R4655
5600
R4654
22K
R4514
22K
C4611
1800P
R4651
100
R4653
220
R4611
100
R4649
47
C4629
5600P
C4501
1500
C4638
8200P
R4652
22K
R4515
22K
R4657
3900
R4603
18K
C4652
1
R4610
47K
C4613
820P
C4651
0.033
R4613
390K
C4619
10V10
R4615
13K
R4510
620
R4612
330
C4618
8200P
R4509
8200
C4617
10V22
C4616
1000P
R4606
5600
C4653
1
C4621
6V100
R4616
1M
C4556
16V10
C4606
6V47
C4636
470P
R4656
24K
R4638
0
C4604
1800P
C4558
25V47
C4557
0.022
C4559
10V47
C4560
0.01
C4561
3300P
R4583
1K
R4539
100K
R4594
47K
C4578
0.1
R4573
1500
C4572
50V3.3
C4522
50V3.3
C4504
16V47
R4534
4700
R4581
100K
C4541
0.1
C4591
0.1
C4585
10V100
C4586
10V100
C4533
10V33
C4583
10V33
R4587
27K
C4503
1500P
R4588
27K
C4592
1500P
R4666
470
R4522
2.2M
C4530
6V47
C4505
16V47
R4584
1500
R4505
39K
R4519
0
R4518
0
R4504
39K
R4592
56K
R4554
27K
R4553
27K
R4552
39K
R4507
47K
R4506
47K
R4551
39K
R4568
27K
R4569
27K
C4508
25V4.7
C4509
10V47
C4511
3300P
C4507
0.022
C4510
0.01
R4535
100K
C4512
560P
R4501
0
C4552
0.1
C4502
0.1
R4591
47K
R4502
0
C4506
16V10
EQ
SW
PB
REC
ALC
ATT
AMP
OUTPUT CTRL
OUTPUT SW
REG
LINE
MIX AMP
INPUT SW
BIL/TU/LINE
LINE 1/2/3
SC/SAP
PNR
FM EMPH
DOC
LPF
EVR
DOD

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

• LINE IN SIGNAL LEVEL 10dB

MODE — — — MAIN SIGNAL PATH IN PLAYBACK MODE

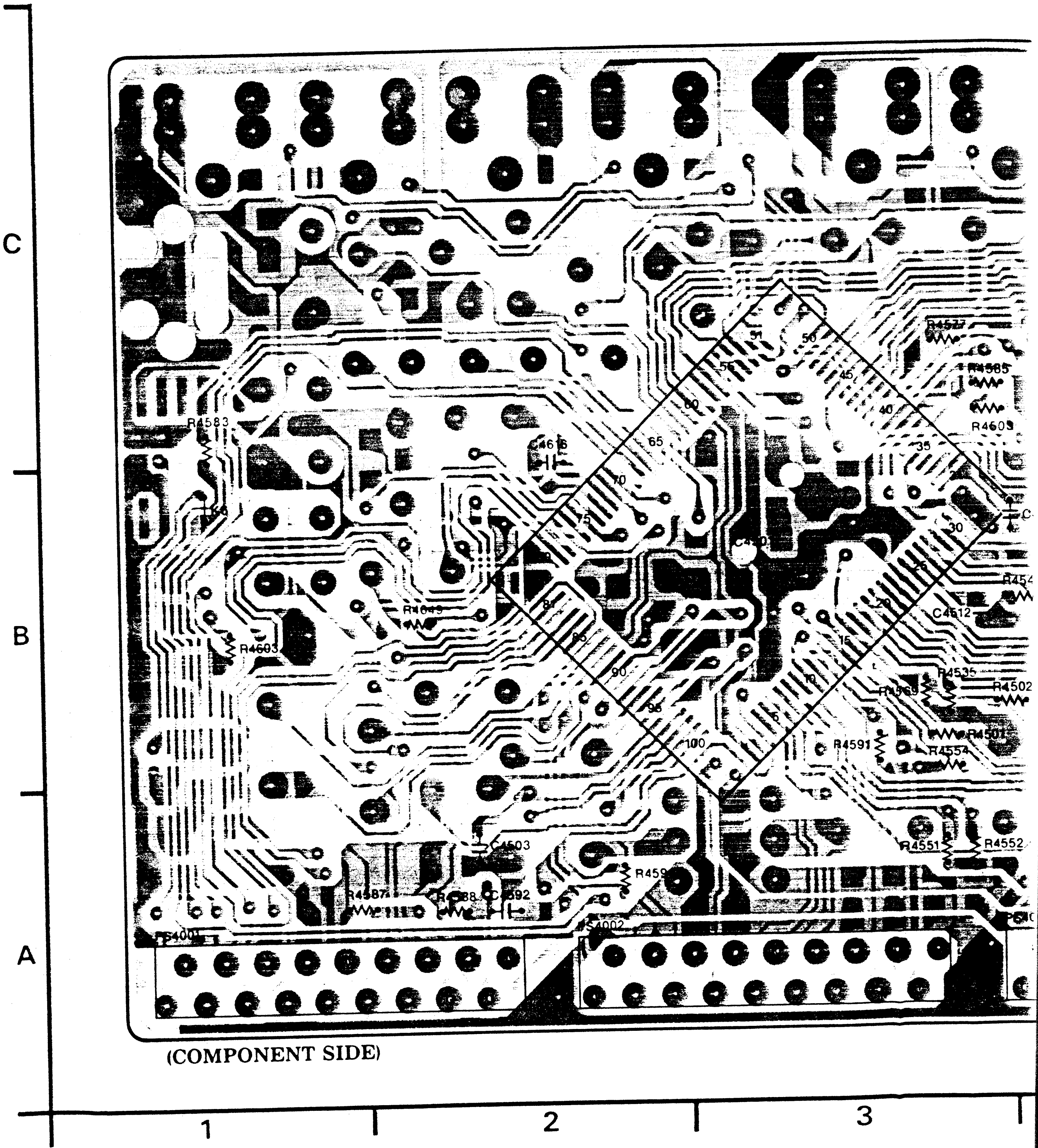

C4558 25V47
C4557 0.022
C4559 10V47
C4560 0.01
C4561 3300P
C4562 560P
R4558 220K
C4563 680P
C4564 560P
R4593 4700
C4565 25V4.7
C4568 0.1
C4567 10V100
RCH REC P.B LEVEL
RCH FREQ
MULTI FREQ RCH
VR4552 500KB
QR4509 MRN2404 PAL(⑭ ON)
47K
47K
R4561 27K
VR4503 3.3KB
R4562 12.4K
L4501 100μ
PNR
FM EMPH
D.O.C.
MOD / DEM
AL IM / HSL
LPF
EVR
C4576 0.047
TL4515
TL4518
R4563 2700
R4542 2200
R4527 33K
R4529 5600
C4537 1000P
R4530 330K
FM DET
R4578 47K
C4545 1000P
R4528 15K
C4501-47 REC 3.0Vp-p 0.2μsec/div
C4538 50V0.47
HOLD M.M
VCB
D4502 MA151K
BPF
AMP
R4541 1500
R4586 1500
LPF FREQ
TL4519
C4501-42 PLAY 5.0Vp-p (10msec/div)
CTRL
VR4550 10KB
R4585 0
R4503 22K
ENVE
C4539 0.22
DOD
R4513 10K
C4501-39 PLAY
R4577 47K
QR4510 MRN1403 (NTSC⑭ ON)
22K
22K
C4521 0.047
C4501-34 REC 3.4Vp-p 0.2μsec/div
ADD / DEM
C4508 25V4.7
C4509 10V47
C4511 3300P
C4507 0.022
C4510 0.01
R4535 100K
C4515 25V4.7
LCH REC P.B LEVEL
C4518 0.1
C4517 10V100
C4512 560P
R4543 4700
VR4502 33KB
R4508 220K
C4514 560P
R4511 27K
C4513 680P
LCH FREQ
VR4501 5KB
R4512 18K
QR4508 MRN2404 PAL(⑭ ON)
47K
47K
D4501 MA151K
VR4551 500KB
MULTI FREQ LCH
L4502 100μ
C4506 16V10
10
11
12
13

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART PLEASE REFER TO PARTS LIST.

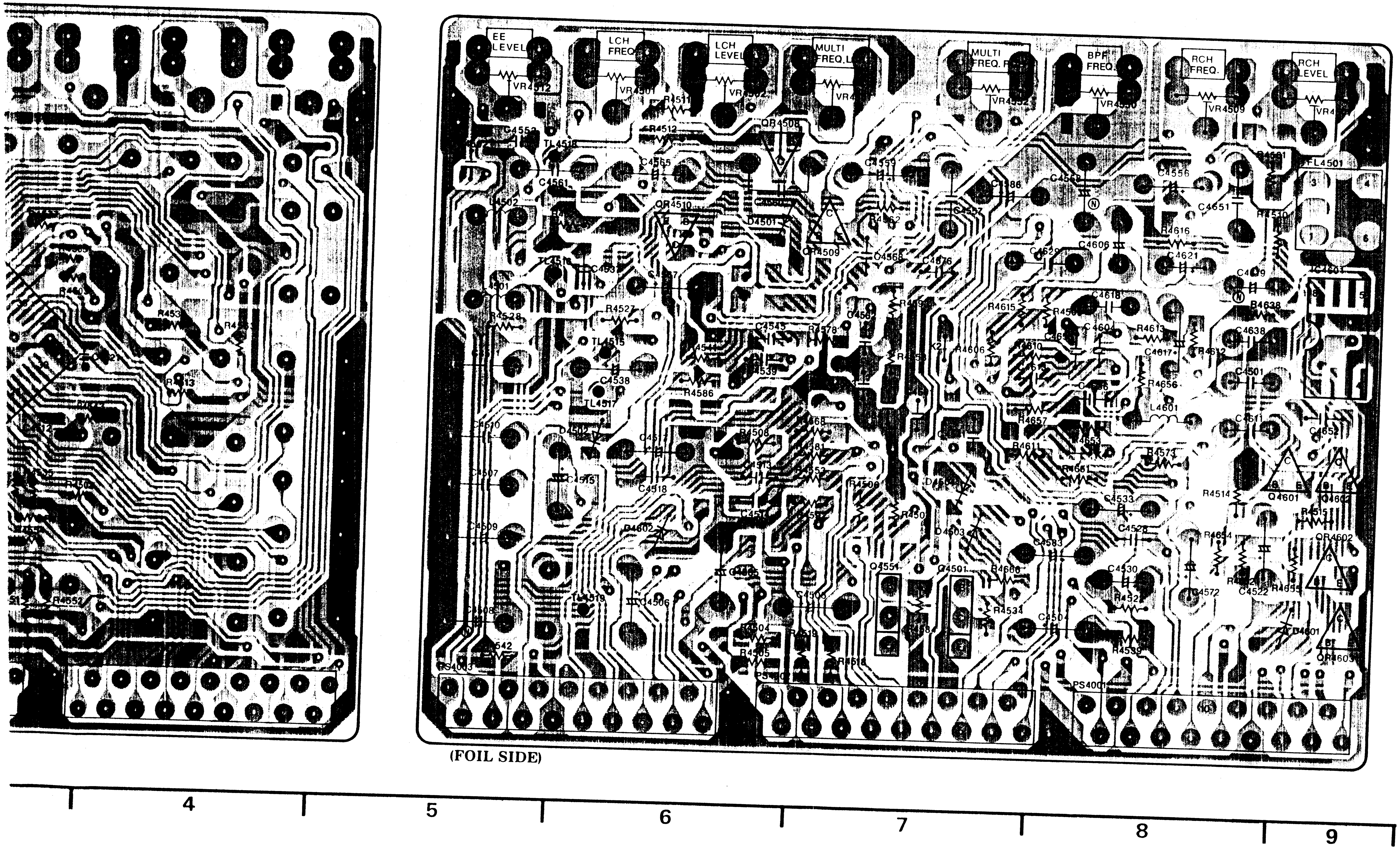
'ODE

• LINE IN SIGNAL LEVEL... −10dB 1kHz

4-18. Hi-Fi AUDIO PACK C.B.A. (VEP04410E)


C
B
A
1
2
3
R4583
C4616
R4603
R4649
R4577
R4585
R4603
C4512
R4535
R4569
R4502
R4591
R4554
R4501
R4551
R4552
C4503
R4587
R4588
C4592
R459
PS4001
PS4002
C420
51
50
55
45
60
40
65
35
70
30
75
25
80
20
85
15
90
10
95
5
100

(COMPONENT SIDE)


EE LEVEL
LCH FREQ.
LCH LEVEL
MULTI FREQ. L
MULTI FREQ. R
BPF FREQ.
RCH FREQ.
RCH LEVEL
VR4512
VR4501
VR4502
VR4550
VR4509
QR4508
QR4509
QR4510
QR4602
QR4603
Q4501
Q4551
Q4601
Q4602
IC4601
FL4501
L4601
D4501
D4502
D4503
D4601
D4602
PS4001
PS4003
4
5
6
7
8
9

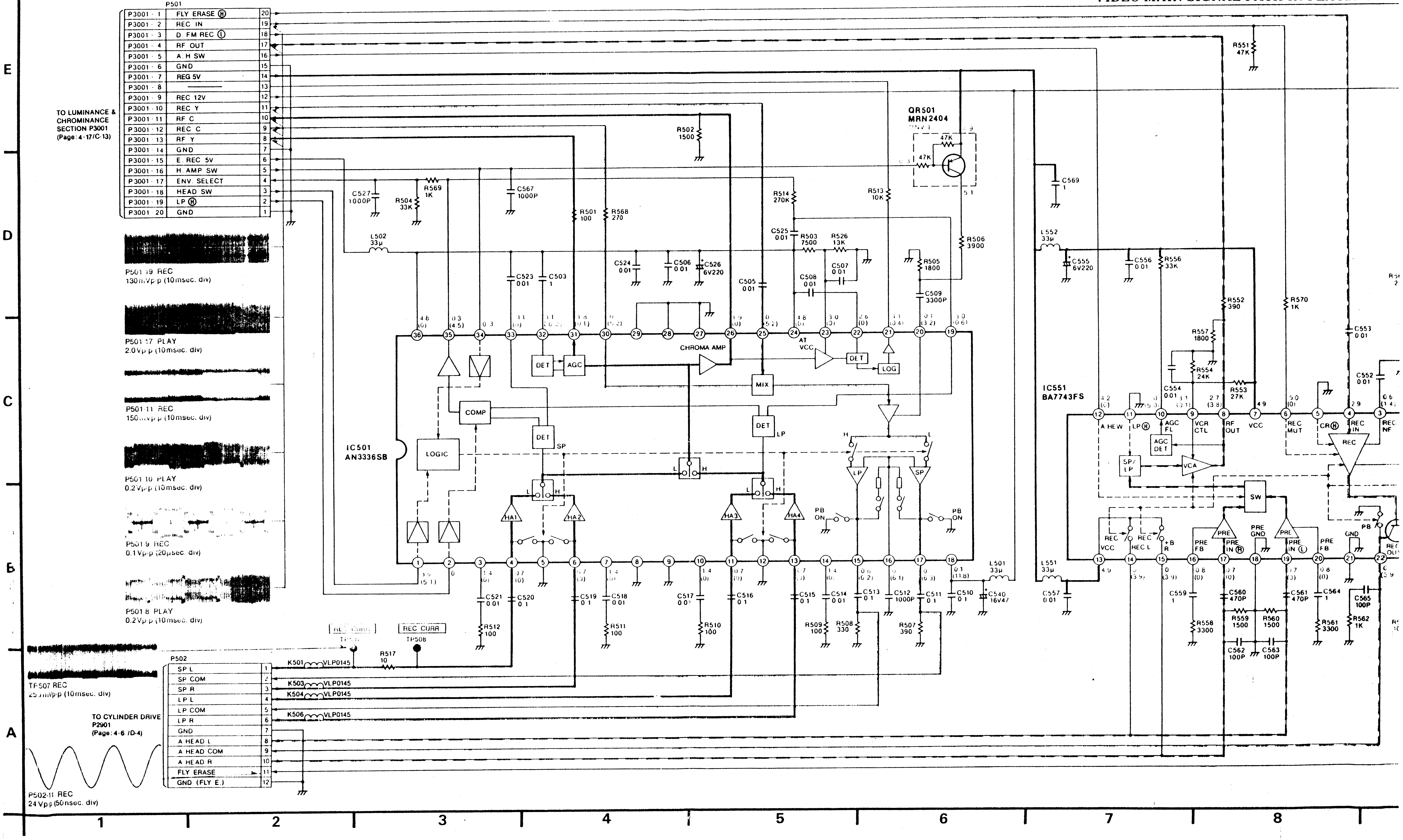
(FOIL SIDE)

HI-FI AUDIO PACK C.B.A.	
Transistor	
Q4501	A-7
Q4551	A-7
Q4601	B-8
Q4602	B-8
Transistor & Resistor	
QR4508	C-6
QR4509	C-7
QR4510	C-6
QR4602	B-8
QR4603	A-8
Integrated Circuit	
IC4501	B-3
IC4601	C-8
Adjustment	
VR4501	C-6
VR4502	C-6
VR4507	C-8
VR4509	C-8
VR4512	C-5
VR4550	C-8
VR4551	C-7
VR4552	C-7
Connector	
PS4001	A-1
PS4001	A-8
PS4002	A-2
PS4002	A-7
PS4003	A-4
PS4003	A-5

ADDRESS INFORMATION

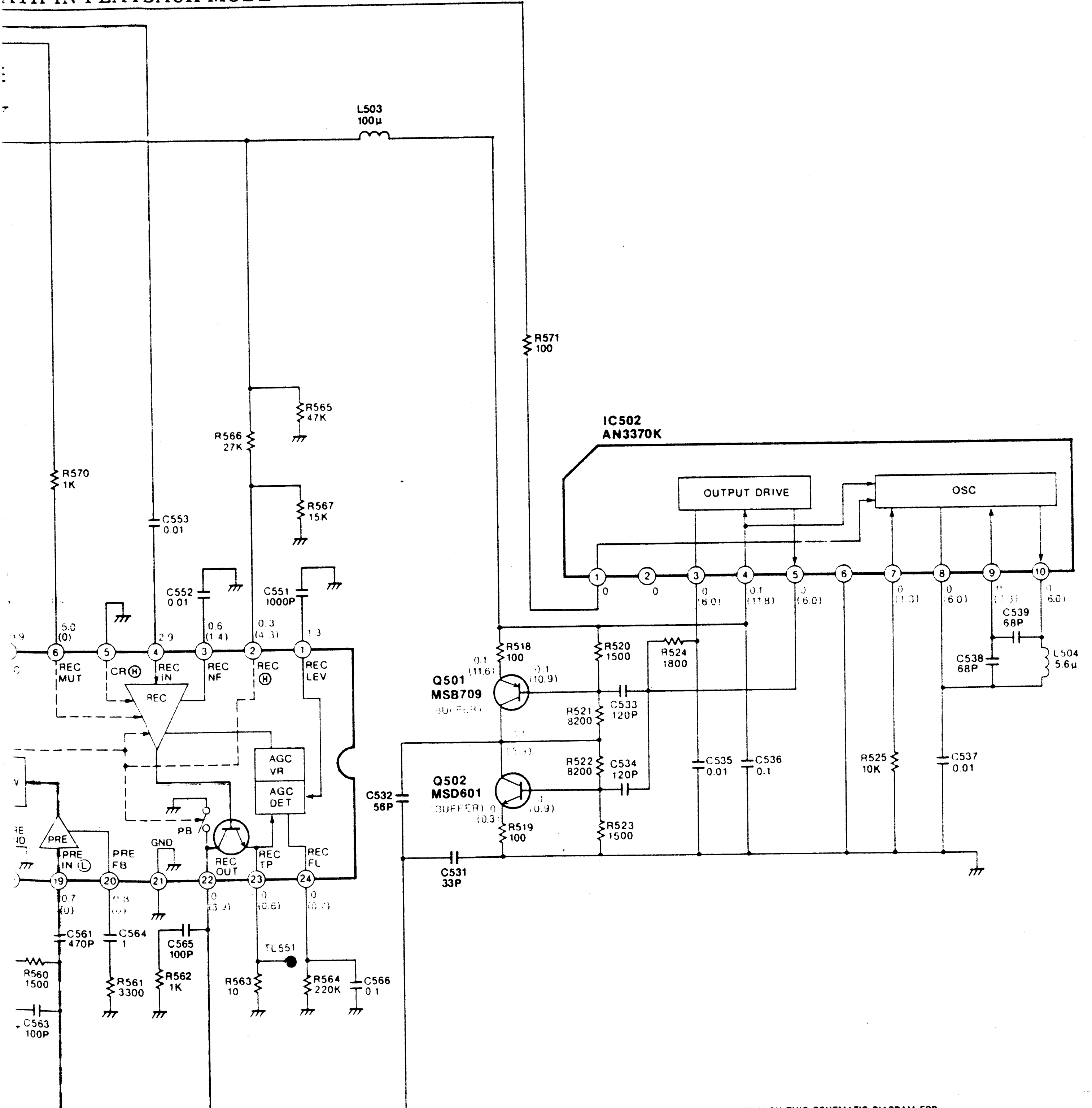
4-19. HEAD AMP SCHEMATIC DIAGRAM

---- VIDEO MAIN SIGNAL PATH IN REC MODE
—— VIDEO MAIN SIGNAL PATH IN PLAYBACK M


P501
P3001-1 FLY ERASE Ⓗ 20
P3001-2 REC IN 19
P3001-3 D FM REC Ⓛ 18
P3001-4 RF OUT 17
P3001-5 A.H SW 16
P3001-6 GND 15
P3001-7 REG 5V 14
P3001-8 13
P3001-9 REC 12V 12
P3001-10 REC Y 11
P3001-11 RF C 10
P3001-12 REC C 9
P3001-13 RF Y 8
P3001-14 GND 7
P3001-15 E. REC 5V 6
P3001-16 H. AMP SW 5
P3001-17 ENV. SELECT 4
P3001-18 HEAD SW 3
P3001-19 LP Ⓗ 2
P3001-20 GND 1
TO LUMINANCE & CHROMINANCE SECTION P3001 (Page: 4-17/C-13)
P501-19 REC 130mVp-p (10msec. div)
P501-17 PLAY 2.0Vp-p (10msec. div)
P501-11 REC 150mVp-p (10msec. div)
P501-10 PLAY 0.2Vp-p (10msec. div)
P501-9 REC 0.1Vp-p (20μsec. div)
P501-8 PLAY 0.2Vp-p (10msec. div)
TP507 REC 25mVp-p (10msec. div)
P502-11 REC 24Vpp (50nsec. div)
P502
SP L 1
SP COM 2
SP R 3
LP L 4
LP COM 5
LP R 6
GND 7
A HEAD L 8
A HEAD COM 9
A HEAD R 10
FLY ERASE 11
GND (FLY E.) 12
TO CYLINDER DRIVE P2901 (Page: 4-6 /D-4)
K501 VLP0145
K503 VLP0145
K504 VLP0145
K506 VLP0145
R517 10
REC CURR TP507
REC CURR TP508
QR501 MRN2404
47K
47K
R502 1500
R569 1K
R504 33K
C527 1000P
C567 1000P
R501 100
R568 270
R514 270K
R513 10K
R506 3900
C569 1
L502 33μ
C523 0.01
C503 1
C524 0.01
C506 0.01
C526 6V220
C525 0.01
R503 7500
R526 13K
C507 0.01
C508 0.01
C505 0.01
R505 1800
C509 3300P
IC501 AN3336SB
CHROMA AMP
AT VCC
DET
AGC
COMP
LOGIC
MIX
LOG
DET SP
DET LP
HA1
HA2
HA3
HA4
LP
SP
PB ON
PB ON
C521 0.01
C520 0.1
R512 100
C519 0.1
C518 0.01
R511 100
C517 0.01
R510 100
C516 0.1
C515 0.1
C514 0.01
C513 0.1
C512 1000P
C511 0.1
C510 0.1
C540 16V47
R509 100
R508 330
R507 390
L501 33μ
R551 47K
L552 33μ
C555 6V220
C556 0.01
R556 33K
R552 390
R570 1K
R557 1800
R554 24K
C554 0.01
R553 27K
C553 0.01
C552 0.01
IC551 BA7743FS
A HEW
LP Ⓗ
AGC FL
VCR CTL
RF OUT
VCC
REC MUT
CR Ⓗ
REC IN
REC NF
AGC DET
SP/LP
VCA
SW
REC
REC VCC
REC L
REC R
+B
PRE FB
PRE IN Ⓡ
PRE GND
PRE IN Ⓛ
PRE FB
GND
PB
L551 33μ
C557 0.01
C559 1
R558 3300
C560 470P
R559 1500
R560 1500
C562 100P
C563 100P
C561 470P
C564 1
R561 3300
C565 100P
R562 1K
E
D
C
B
A
1
2
3
4
5
6
7
8

ATH IN REC MODE
ATH IN PLAYBACK MODE

- - -Hi-Fi AUDIO MAIN SIGNAL PATH IN REC MODE
———Hi-Fi AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE


L503
100µ
R571
100
R565
47K
R566
27K
R570
1K
R567
15K
C553
0.01
C552
0.01
C551
1000P
IC502
AN3370K
OUTPUT DRIVE
OSC
C539
68P
C538
68P
L504
5.6µ
REC MUT
CR Ⓗ
REC IN
REC NF
REC Ⓗ
REC LEV
REC
AGC VR
AGC DET
PB
PRE
PRE IN Ⓛ
PRE FB
GND
REC OUT
REC TP
REC FL
R518
100
R520
1500
R524
1800
Q501
MSB709
BUFFER
C533
120P
R521
8200
R522
8200
C534
120P
Q502
MSD601
BUFFER
C532
56P
R519
100
R523
1500
C531
33P
C535
0.01
C536
0.1
R525
10K
C537
0.01
C561
470P
C564
1
C565
100P
R560
1500
R561
3300
R562
1K
R563
10
TL551
R564
220K
C566
0.1
C563
100P

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

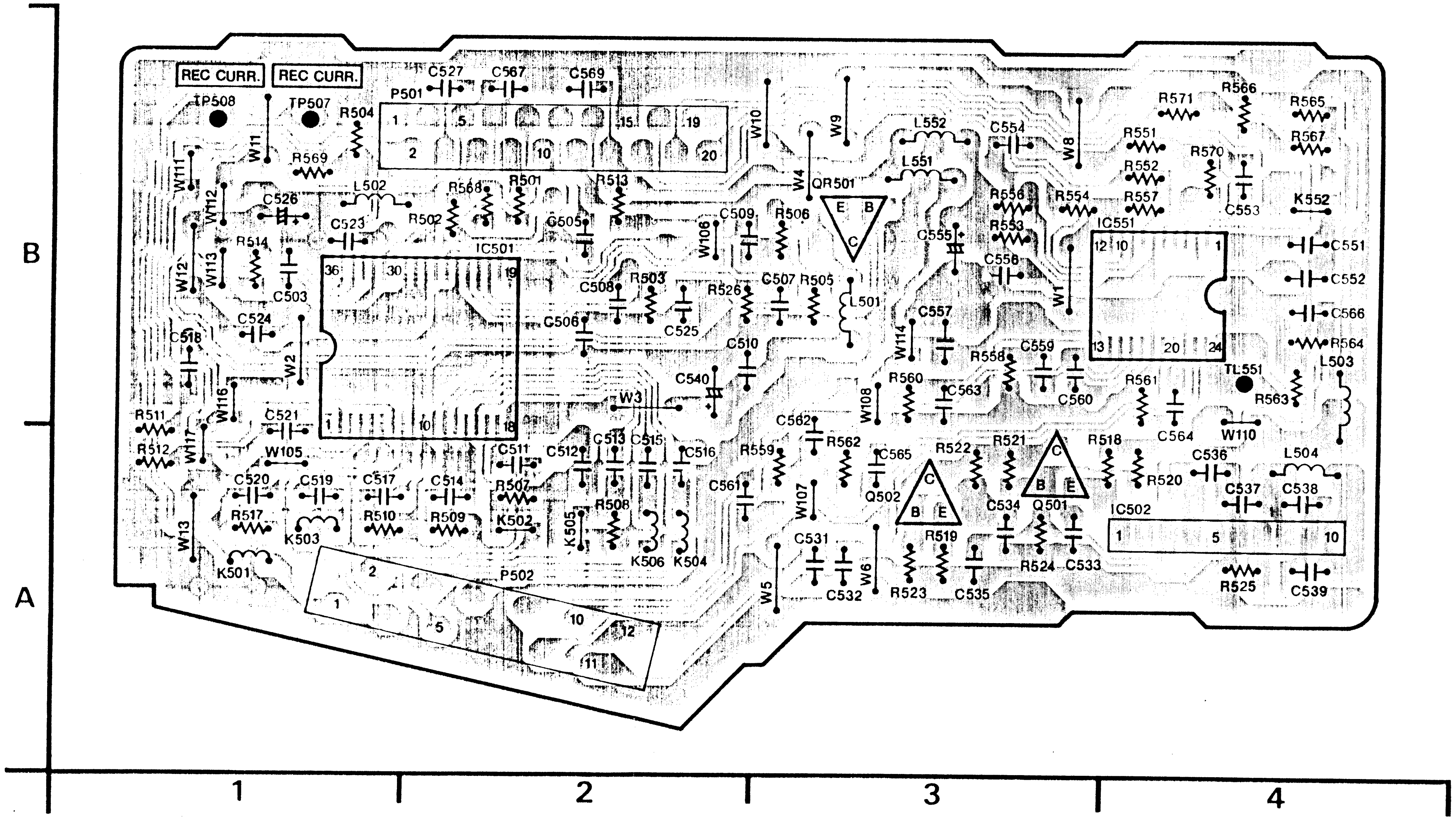
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL. (S-VHS: SP MODE)

8 9 10 11 12

4-20. HEAD AMP C.B.A. (VEP05176G)

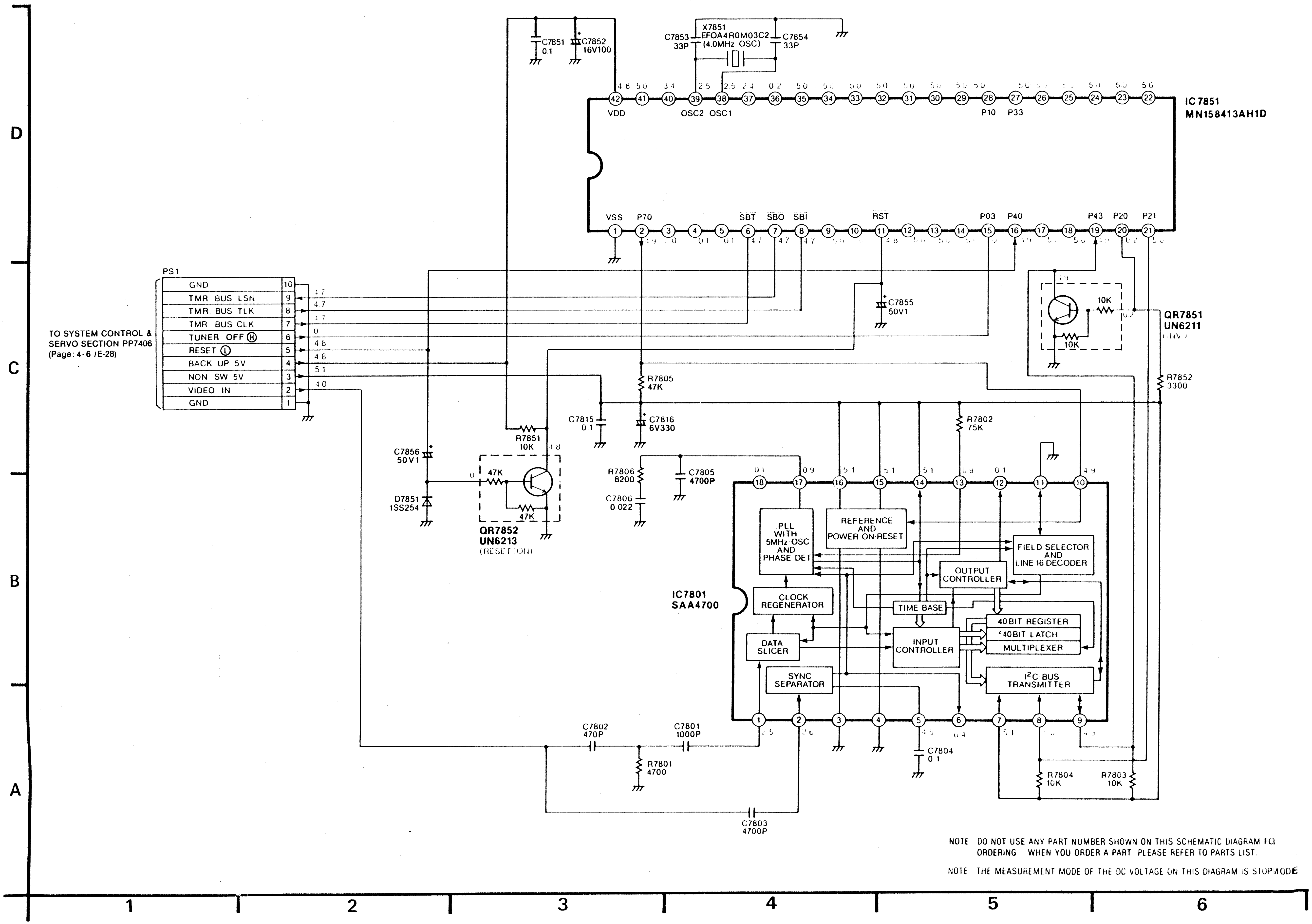
HEAD AMP C.B.A.	
Transistor	
Q501 Q502	A-3 A-3
Transistor & Resistor	
QR501	B-3
Integrated Circuit	
IC501 IC502 IC551	B-1 A-4 B-4
Test Point	
TL551 TP507 TP508	B-4 B-1 B-1
Connector	
P501 P502	B-2 A-1

ADDRESS INFORMATION



B
A
1
2
3
4
REC CURR.
REC CURR.
TP508
TP507
R504
P501
C527
C567
C569
W11
W111
W112
W12
W113
W13
W116
W117
W105
W106
W107
W108
W114
W110
W10
W9
W8
W4
W1
W2
W3
W5
W6
R569
L502
C526
C523
R514
C503
C524
C518
R511
R512
C521
C520
C519
C517
C514
R517
K503
R510
R509
K501
K502
K504
K505
K506
P502
IC501
R502
R568
R501
R513
C505
C506
C508
R503
C525
C509
R506
R526
C507
R505
L501
C510
C540
C511
C512
C513
C515
C516
R507
R508
C561
R559
C562
R562
C565
QR501
E
B
C
L552
L551
C554
C555
C556
R556
R553
C557
R558
C559
C560
R560
C563
Q502
Q501
R522
R521
C534
R519
R523
C531
C532
C535
R524
C533
R518
R520
C536
C537
C538
L504
IC502
R525
C539
R571
R566
R565
R567
R551
R552
R570
R557
R554
C553
K552
IC551
C551
C552
C566
R564
L503
TL551
R563
R561
C564
1
2
5
10
15
19
20
30
36
11
12
13
24

4-21. VPS PACK SCHEMATIC DIAGRAM


D
C
B
A
1
2
3
4
5
6
PS1
GND
TMR BUS LSN
TMR BUS TLK
TMR BUS CLK
TUNER OFF Ⓗ
RESET Ⓛ
BACK UP 5V
NON SW 5V
VIDEO IN
GND
10
9
8
7
6
5
4
3
2
1
TO SYSTEM CONTROL &
SERVO SECTION PP7406
(Page: 4-6 /E-28)
C7851
0.1
C7852
16V100
X7851
EFOA4R0M03C2
(4.0MHz OSC)
C7853
33P
C7854
33P
IC7851
MN158413AH1D
VDD
OSC2
OSC1
P10
P33
VSS
P70
SBT
SBO
SBI
RST
P03
P40
P43
P20
P21
C7855
50V1
QR7851
UN6211
10K
10K
R7852
3300
R7805
47K
C7815
0.1
C7816
6V330
R7802
75K
C7856
50V1
D7851
1SS254
R7851
10K
47K
47K
QR7852
UN6213
(RESET ON)
R7806
8200
C7806
0.022
C7805
4700P
IC7801
SAA4700
PLL
WITH
5MHz OSC
AND
PHASE DET
REFERENCE
AND
POWER ON RESET
FIELD SELECTOR
AND
LINE 16 DECODER
OUTPUT
CONTROLLER
CLOCK
REGENERATOR
TIME BASE
40BIT REGISTER
40BIT LATCH
MULTIPLEXER
DATA
SLICER
INPUT
CONTROLLER
SYNC
SEPARATOR
I²C BUS
TRANSMITTER
C7802
470P
C7801
1000P
R7801
4700
C7803
4700P
C7804
0.1
R7804
10K
R7803
10K

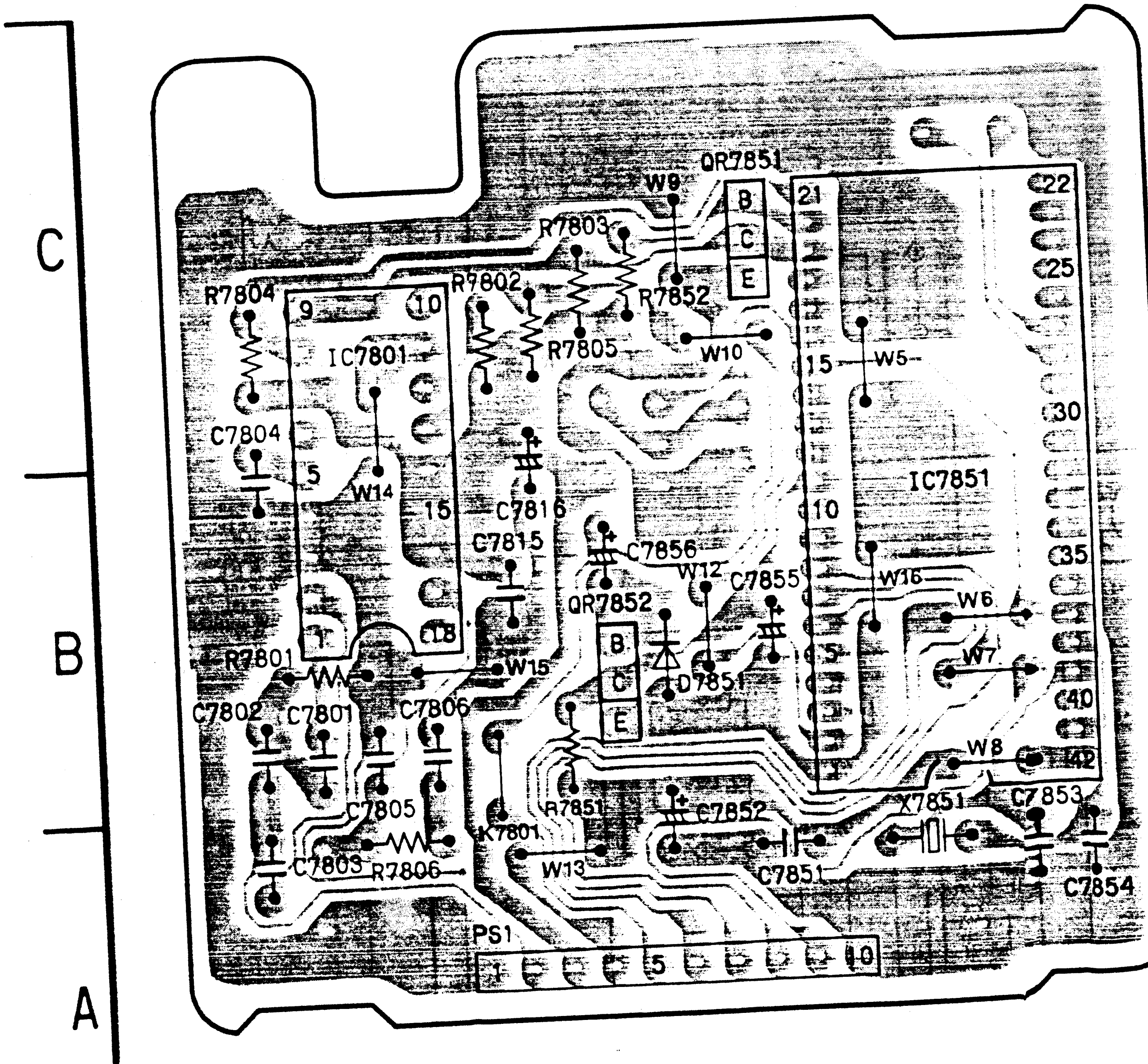
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

4-22. VPS PACK C.B.A. (VEP07538J)

VPS PACK C.B.A.	
Transistor & Resistor	
QR7851 QR7852	C-2 B-2
Integrated Circuit	
IC7801 IC7851	C-1 B-3
Connector	
PS1	A-2

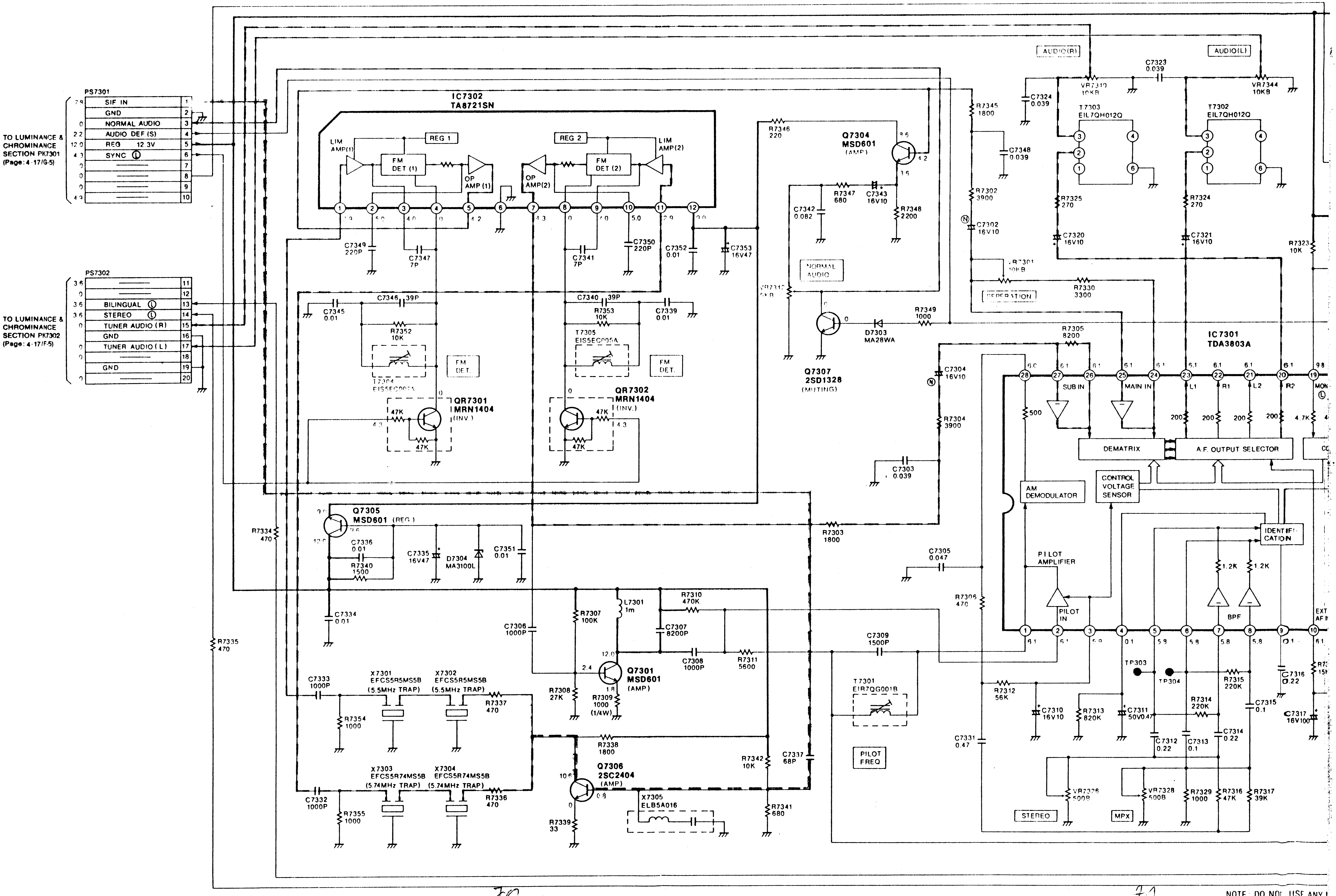
ADDRESS INFORMATION



C
B
A
QR7851
W9
B
C
E
21
22
25
R7803
R7802
R7852
R7804
9
10
IC7801
R7805
W10
15
W5
30
C7804
5
W14
15
C7816
IC7851
C7815
10
C7856
35
W12
C7855
W16
QR7852
W6
B
R7801
1
18
W15
D7851
5
W7
C
C7802
C7801
C7806
E
40
W8
42
R7851
C7853
X7851
C7852
C7805
K7801
C7803
R7806
W13
C7851
C7854
PS1
1
5
10

. DECODER PACK SCHEMATIC DIAGRAM

AUDIO MAIN SIGNAL PATH



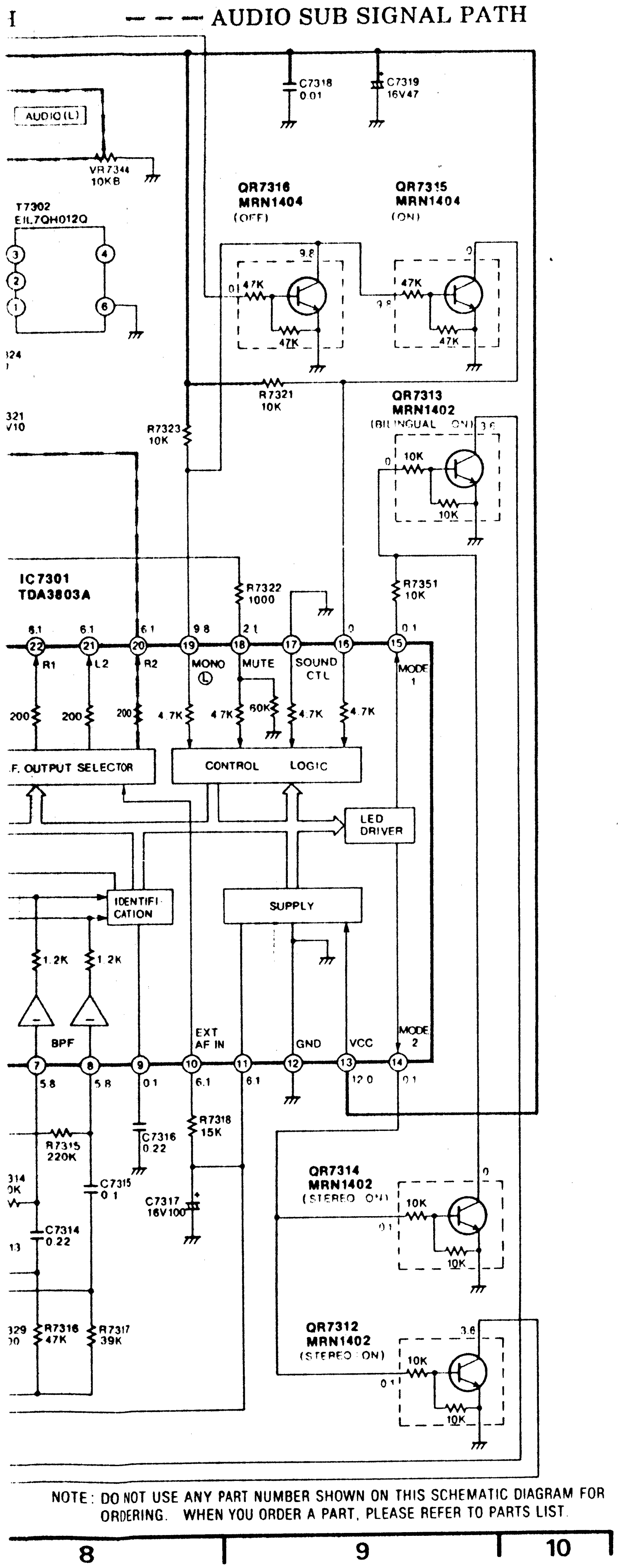
TO LUMINANCE & CHROMINANCE SECTION PK7301 (Page: 4-17/G-5)
PS7301
SIF IN
GND
NORMAL AUDIO
AUDIO DEF (S)
REG 12.3V
SYNC Ⓛ
TO LUMINANCE & CHROMINANCE SECTION PK7302 (Page: 4-17/F-5)
PS7302
BILINGUAL Ⓛ
STEREO Ⓛ
TUNER AUDIO (R)
GND
TUNER AUDIO (L)
GND
IC7302
TA8721SN
LIM AMP(1)
FM DET (1)
REG 1
OP AMP (1)
REG 2
FM DET (2)
LIM AMP(2)
OP AMP(2)
C7349 220P
C7347 7P
C7341 7P
C7350 220P
C7352 0.01
C7353 16V47
C7345 0.01
C7346 39P
R7352 10K
T7304 EIS5EC005A
FM DET.
QR7301 MRN1404 (INV.)
47K
C7340 39P
R7353 10K
C7339 0.01
T7305 EIS5EC005A
QR7302 MRN1404 (INV.)
Q7305 MSD601 (REG.)
C7336 0.01
R7340 1500
C7335 16V47
D7304 MA3100L
C7351 0.01
C7334 0.01
R7334 470
R7335 470
C7306 1000P
R7307 100K
L7301 1m
R7310 470K
C7307 8200P
C7308 1000P
R7311 5600
Q7301 MSD601 (AMP)
R7308 27K
R7309 1000 (1/4W)
C7333 1000P
X7301 EFCS5R5MS5B
X7302 EFCS5R5MS5B
(5.5MHz TRAP)
R7354 1000
R7337 470
R7338 1800
R7342 10K
C7337 68P
X7303 EFCS5R74MS5B
X7304 EFCS5R74MS5B
(5.74MHz TRAP)
C7332 1000P
R7355 1000
R7336 470
Q7306 2SC2404 (AMP)
X7305 ELB5A016
R7339 33
R7341 680
R7346 220
Q7304 MSD601 (AMP)
C7342 0.082
R7347 680
C7343 16V10
R7348 2200
NORMAL AUDIO
VR7312 5KB
Q7307 2SD1328 (MUTING)
D7303 MA28WA
R7349 1000
R7345 1800
R7302 3900
C7302 16V10
VR7301 10KB
SEPERATION
R7330 3300
C7324 0.039
C7348 0.039
AUDIO (R)
AUDIO (L)
VR7310 10KB
VR7344 10KB
C7323 0.039
T7303 EIL7QH012Q
T7302 EIL7QH012Q
R7325 270
R7324 270
C7320 16V10
C7321 16V10
R7323 10K
R7305 8200
R7303 1800
C7304 16V10
R7304 3900
C7303 0.039
IC7301
TDA3803A
SUB IN
MAIN IN
L1
R1
L2
R2
MON Ⓛ
DEMATRIX
A.F. OUTPUT SELECTOR
AM DEMODULATOR
CONTROL VOLTAGE SENSOR
IDENTIFI-CATION
PILOT AMPLIFIER
PILOT IN
BPF
EXT AF IN
C7305 0.047
R7306 470
C7309 1500P
T7301 EIR7QG001B
PILOT FREQ
R7312 56K
C7310 16V10
R7313 820K
C7311 50V0.47
TP303
TP304
R7315 220K
R7314 220K
C7315 0.1
C7316 0.22
C7317 16V100
C7331 0.47
C7312 0.22
C7313 0.1
C7314 0.22
VR7326 500B
VR7328 500B
R7329 1000
R7316 47K
R7317 39K
STEREO
MPX

70

71

NOTE: DO NOT USE ANY I

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE

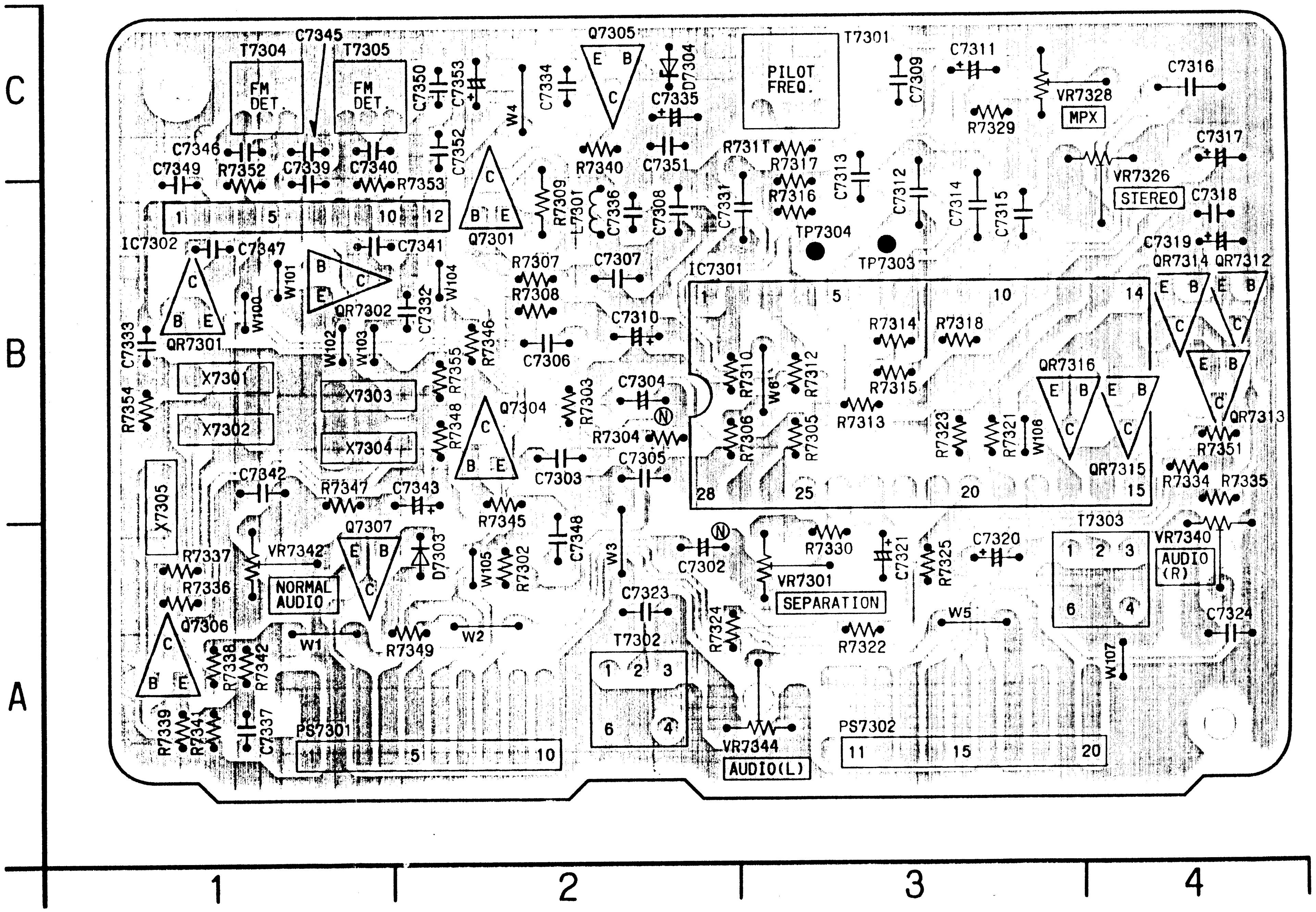

AUDIO SUB SIGNAL PATH
AUDIO (L)
VR7344 10KB
T7302 EIL7QH012Q
C7318 0.01
C7319 16V47
QR7316 MRN1404 (OFF)
QR7315 MRN1404 (ON)
47K
47K
9.8
R7321 10K
R7323 10K
QR7313 MRN1402 (BILINGUAL ON)
10K
10K
IC7301 TDA3803A
R7322 1000
R7351 10K
R1
L2
R2
MONO Ⓛ
MUTE
SOUND CTL
MODE 1
200
200
200
4.7K
4.7K
60K
4.7K
4.7K
F. OUTPUT SELECTOR
CONTROL LOGIC
LED DRIVER
IDENTIFICATION
SUPPLY
1.2K
1.2K
BPF
EXT AF IN
GND
VCC
MODE 2
R7315 220K
C7316 0.22
R7318 15K
C7315 0.1
C7317 16V100
C7314 0.22
R7316 47K
R7317 39K
QR7314 MRN1402 (STEREO ON)
QR7312 MRN1402 (STEREO ON)
8
9
10

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

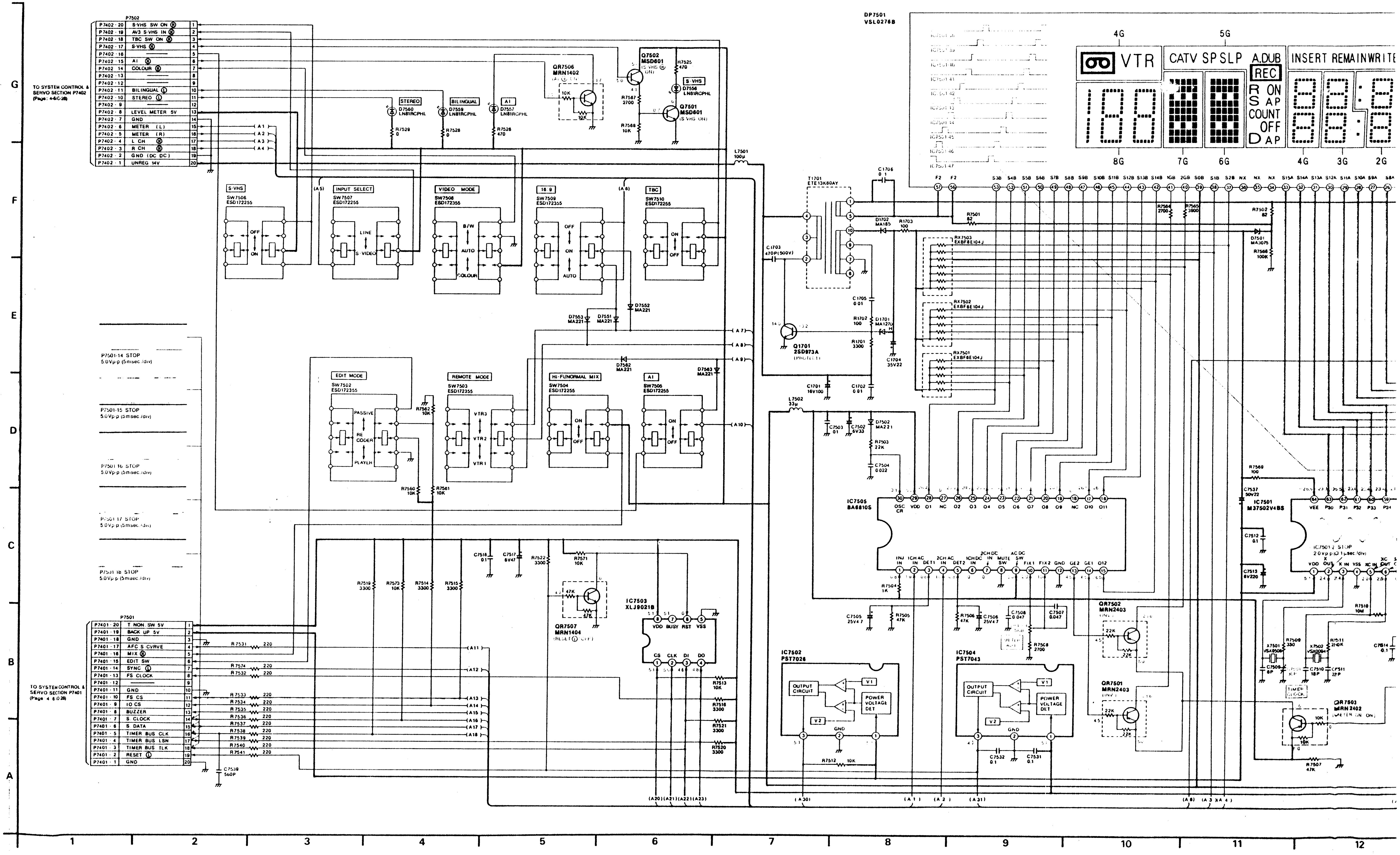
4-24. DECODER PACK C.B.A. (VEP07671A)

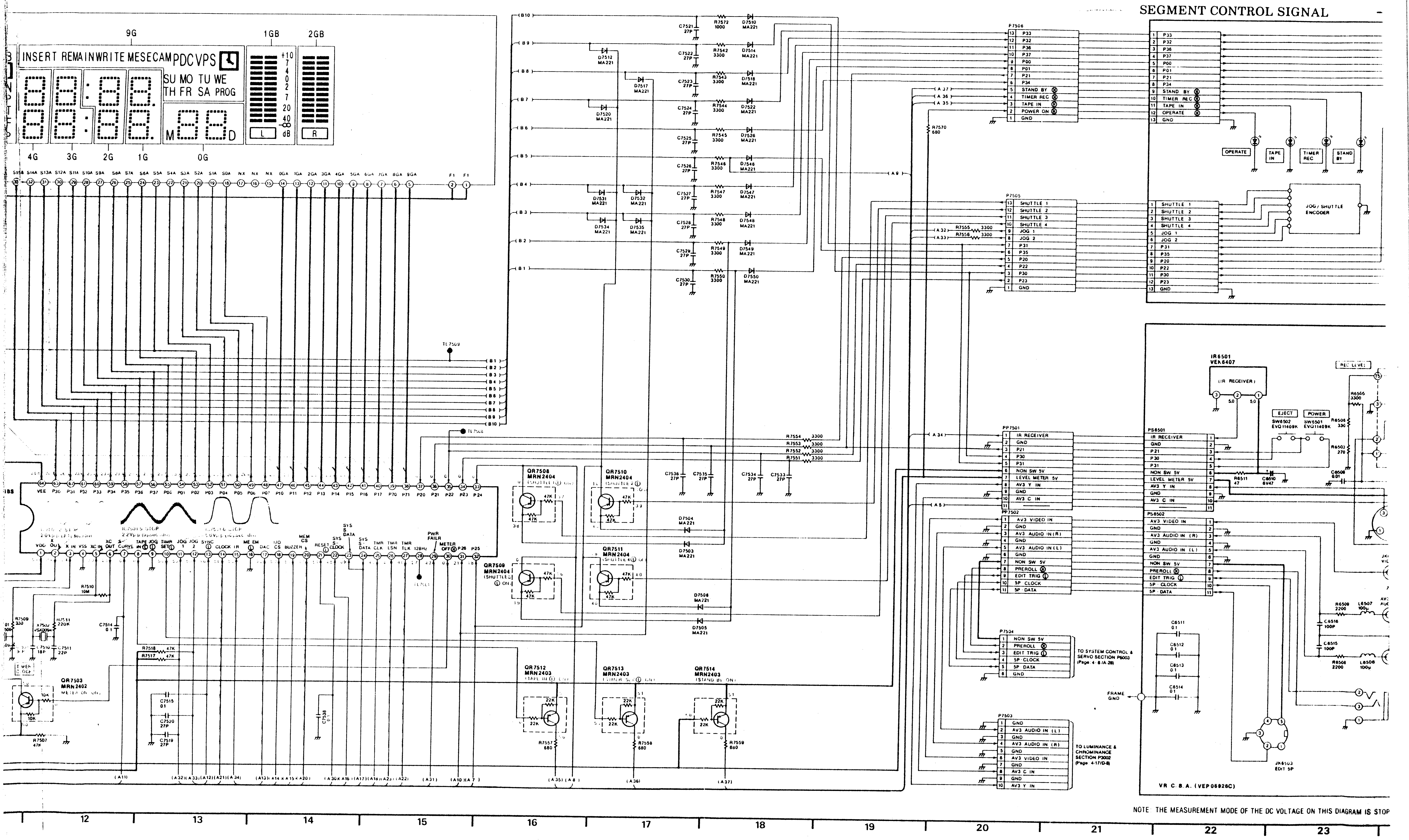
DECODER PACK C.B.A.			
Transistor		**Test Point**	
Q7301	B-2	TP7303	B-3
Q7304	B-2	TP7304	B-3
Q7305	C-2	**Adjustment**	
Q7306	A-1	T7301	C-3
Q7307	A-1	T7302	A-2
Transistor & Resistor		T7303	A-4
QR7301	B-1	T7304	C-1
QR7302	B-1	T7305	C-1
QR7312	B-4	VR7301	A-3
QR7313	B-4	VR7326	C-4
QR7314	B-4	VR7328	C-3
QR7315	B-4	VR7340	A-4
QR7316	B-3	VR7342	A-1
Integrated Circuit		VR7344	A-3
IC7301	B-3	**Connector**	
IC7302	B-1	PS7301	A-1
		PS7302	A-3

ADDRESS INFORMATION


C
B
A
1
2
3
4
T7304 FM DET.
T7305 FM DET.
C7345
C7350
C7353
W4
C7334
Q7305
D7304
C7335
PILOT FREQ.
T7301
C7309
C7311
R7329
VR7328 MPX
C7316
C7317
C7346
C7349
R7352
C7339
C7340
R7353
C7352
Q7301
R7309
L7301
R7340
C7336
C7308
C7351
C7331
R7317
R7316
C7313
C7312
C7314
C7315
VR7326 STEREO
C7318
C7319
TP7304
TP7303
IC7302
C7347
C7341
QR7301
QR7302
W101
W100
W102
W103
W104
C7332
C7333
R7307
R7308
C7307
IC7301
C7310
C7306
R7346
R7355
R7314
R7318
R7315
R7313
QR7314
QR7312
QR7316
QR7313
R7354
X7301
X7302
X7303
X7304
R7348
Q7304
R7303
C7304
R7304
R7310
W6
R7312
R7306
R7305
R7323
R7321
W106
QR7315
R7351
R7334
R7335
X7305
C7342
R7347
C7343
C7303
C7305
Q7307
R7345
C7348
R7337
VR7342 NORMAL AUDIO
D7303
R7336
W105
R7302
W3
C7302
R7330
VR7301 SEPARATION
C7321
R7325
C7320
T7303
VR7340 AUDIO (R)
C7324
Q7306
W1
R7349
W2
C7323
T7302
R7324
W5
R7322
W107
R7338
R7342
R7339
R7341
C7337
PS7301
VR7344 AUDIO(L)
PS7302
1
5
10
12
14
15
20
25
28
11

4-25. TIMER & VR SCHEMATIC DIAGRAM


P7502
TO SYSTEM CONTROL & SERVO SECTION P7402 (Page: 4-6/C-28)
P7402 · 20 S·VHS SW ON Ⓗ 1
P7402 · 19 AV3 S·VHS IN Ⓗ 2
P7402 · 18 TBC SW ON Ⓗ 3
P7402 · 17 S·VHS Ⓗ 4
P7402 · 16 5
P7402 · 15 AI Ⓗ 6
P7402 · 14 COLOUR Ⓗ 7
P7402 · 13 8
P7402 · 12 9
P7402 · 11 BILINGUAL Ⓛ 10
P7402 · 10 STEREO Ⓛ 11
P7402 · 9 12
P7402 · 8 LEVEL METER 5V 13
P7402 · 7 GND 14
P7402 · 6 METER (L) 15
P7402 · 5 METER (R) 16
P7402 · 4 L CH Ⓗ 17
P7402 · 3 R CH Ⓗ 18
P7402 · 2 GND (DC DC) 19
P7402 · 1 UNREG 14V 20
STEREO D7560 LN81RCPHL
BILINGUAL D7559 LN81RCPHL
AI D7557 LN81RCPHL
QR7506 MRN1402
Q7502 MSD601 (S·VHS Ⓗ ON)
S·VHS D7556 LN81RCPHL
Q7501 MSD601 (S·VHS ON)
L7501 100μ
S·VHS SW7506 ESD172255
INPUT SELECT SW7507 ESD172255 LINE S·VIDEO
VIDEO MODE SW7508 ESD172355 B/W AUTO COLOUR
16:9 SW7509 ESD172355 OFF ON AUTO
TBC SW7510 ESD172255 ON OFF
EDIT MODE SW7502 ESD172355 PASSIVE RE CODER PLAYLH
REMOTE MODE SW7503 ESD172355 VTR3 VTR2 VTR1
HI-FI/NORMAL MIX SW7504 ESD172255 ON OFF
AI SW7505 ESD172255 ON OFF
P7501-14 STOP 5.0Vp-p (5msec./div)
P7501-15 STOP 5.0Vp-p (5msec./div)
P7501-16 STOP 5.0Vp-p (5msec./div)
P7501-17 STOP 5.0Vp-p (5msec./div)
P7501-18 STOP 5.0Vp-p (5msec./div)
P7501
TO SYSTEM CONTROL & SERVO SECTION P7401 (Page 4-6/0-28)
P7401 · 20 T. NON. SW 5V 1
P7401 · 19 BACK UP 5V 2
P7401 · 18 GND 3
P7401 · 17 AFC S·CVRVE 4
P7401 · 16 MIX Ⓗ 5
P7401 · 15 EDIT SW 6
P7401 · 14 SYNC Ⓛ 7
P7401 · 13 FS CLOCK 8
P7401 · 12 9
P7401 · 11 GND 10
P7401 · 10 FS CS 11
P7401 · 9 IO CS 12
P7401 · 8 BUZZER 13
P7401 · 7 S. CLOCK 14
P7401 · 6 S. DATA 15
P7401 · 5 TIMER BUS CLK 16
P7401 · 4 TIMER BUS LSN 17
P7401 · 3 TIMER BUS TLK 18
P7401 · 2 RESET Ⓛ 19
P7401 · 1 GND 20
QR7507 MRN1404 (RESET Ⓛ OFF)
IC7503 XLJ9021B VDD BUSY RST VSS CS CLK DI DO
IC7502 PST7026 OUTPUT CIRCUIT POWER VOLTAGE DET GND
IC7504 PST7043 OUTPUT CIRCUIT POWER VOLTAGE DET GND
T1701 ETE13K60AY
Q1701 2SD973A
DP7501 VSL0276B
VTR CATV SP SLP A.DUB REC INSERT REMAIN WRITE R ON S AP COUNT OFF D AP
4G 5G 8G 7G 6G 4G 3G 2G
IC7505 BA6810S OSC CR VDD O1 NC O2 O3 O4 O5 O6 O7 O8 O9 NC O10 O11 INJ IN 1CH AC IN DET1 2CH AC IN DET2 1CHDC IN 2CHDC IN AC DC MUTE SW FIX1 FIX2 GND GE2 GE1 O12
IC7501 M37502V4BS VEE P30 P31 P32 P33 VDD OUT X IN VSS
IC7501-2 STOP
QR7502 MRN2403
QR7501 MRN2403
QR7503 MRN2402 (METER ON)
TIMER CLOCK
(A1) (A2) (A3) (A4) (A5) (A6) (A7) (A8) (A9) (A10) (A11) (A12) (A13) (A14) (A15) (A16) (A17) (A18) (A20) (A21) (A22) (A23) (A30) (A31)
G F E D C B A
1 2 3 4 5 6 7 8 9 10 11 12


SEGMENT CONTROL SIGNAL
INSERT REMAIN WRITE MESECAM PDC VPS
SU MO TU WE
TH FR SA PROG
9G
1GB
2GB
4G
3G
2G
1G
0G
L
R
dB
P7506
P7505
P33
P32
P36
P37
P00
P01
P21
P34
STAND BY
TIMER REC
TAPE IN
POWER ON
OPERATE
GND
SHUTTLE 1
SHUTTLE 2
SHUTTLE 3
SHUTTLE 4
JOG 1
JOG 2
P31
P35
P20
P22
P30
P23
JOG / SHUTTLE ENCODER
TAPE IN
TIMER REC
STAND BY
PP7501
PP7502
PS6501
PS6502
IR RECEIVER
NON SW 5V
LEVEL METER 5V
AV3 Y IN
AV3 C IN
AV3 VIDEO IN
AV3 AUDIO IN (R)
AV3 AUDIO IN (L)
PREROLL
EDIT TRIG
5P CLOCK
5P DATA
P7504
TO SYSTEM CONTROL & SERVO SECTION P6003 (Page 4-8/A-28)
P7503
TO LUMINANCE & CHROMINANCE SECTION P3002 (Page 4-17/D-8)
IR6501
VEK6407
(IR RECEIVER)
EJECT
POWER
SW6502 EVQ11409K
SW6501 EVQ11409K
FRAME GND
JK6503 EDIT 5P
VR C.B.A. (VEP06926C)
REC LEVEL
QR7508 MRN2404
QR7509 MRN2404
QR7510 MRN2404
QR7511 MRN2404
QR7512 MRN2403
QR7513 MRN2403
QR7514 MRN2403
QR7503 MRN2402
TL7509
VEE
VDD
X IN
VSS
XC IN
XC OUT
S CURVE
TAPE IN
JOG
TIMR SET
SYNC
CLOCK
IR
ME EM
DAC
I/O CS
BUZZER
MEM CS
RESET
SYS CLOCK
SYS DATA
TMR CLK
TMR LSN
TMR TLK
128Hz
PWR FAILR
METER OFF
P26
P25
P24
P23
P22
P21
P20
12
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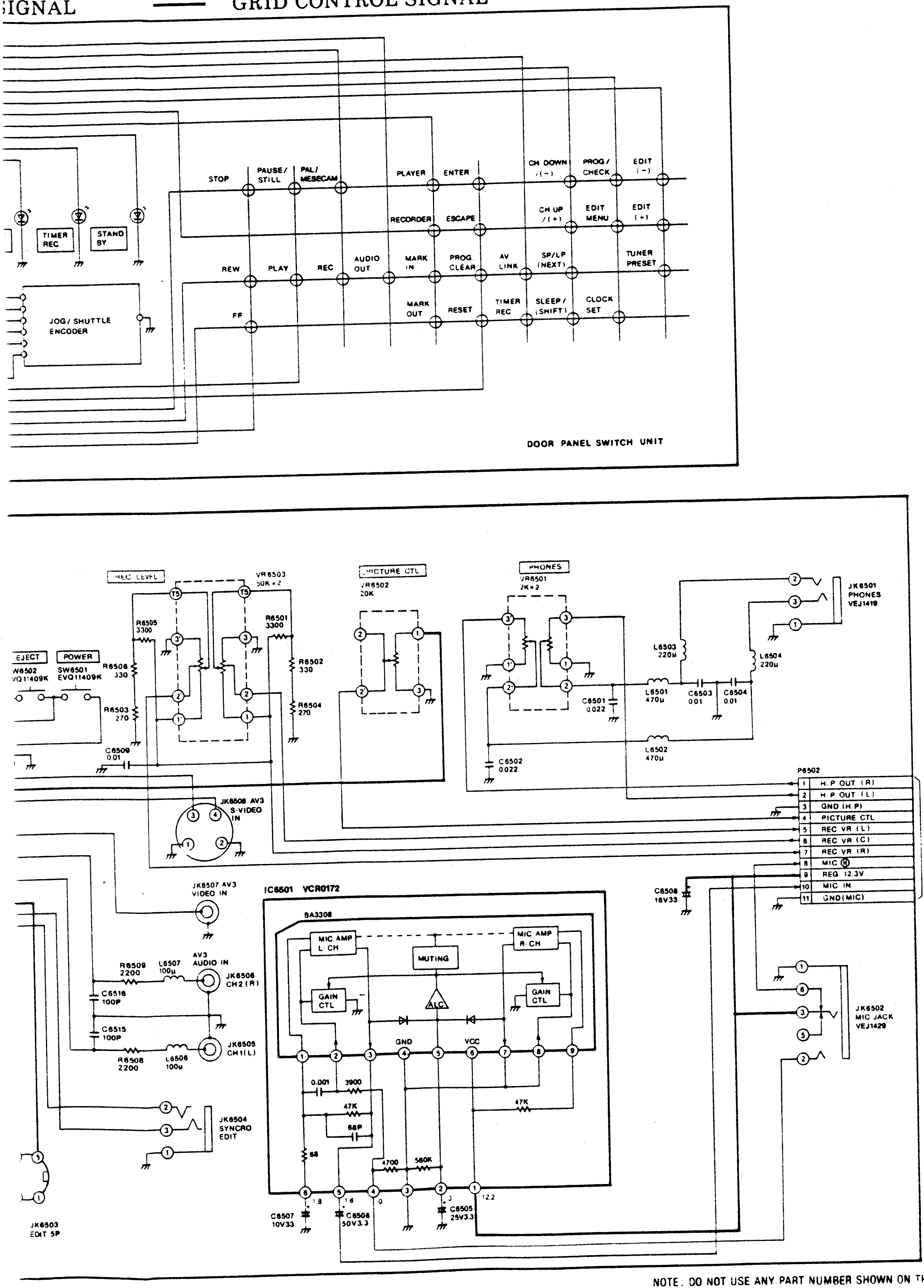
22
23

NOTE THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP

;IGNAL —— GRID CONTROL SIGNAL - - - TUNE CONTROL SIGNAL

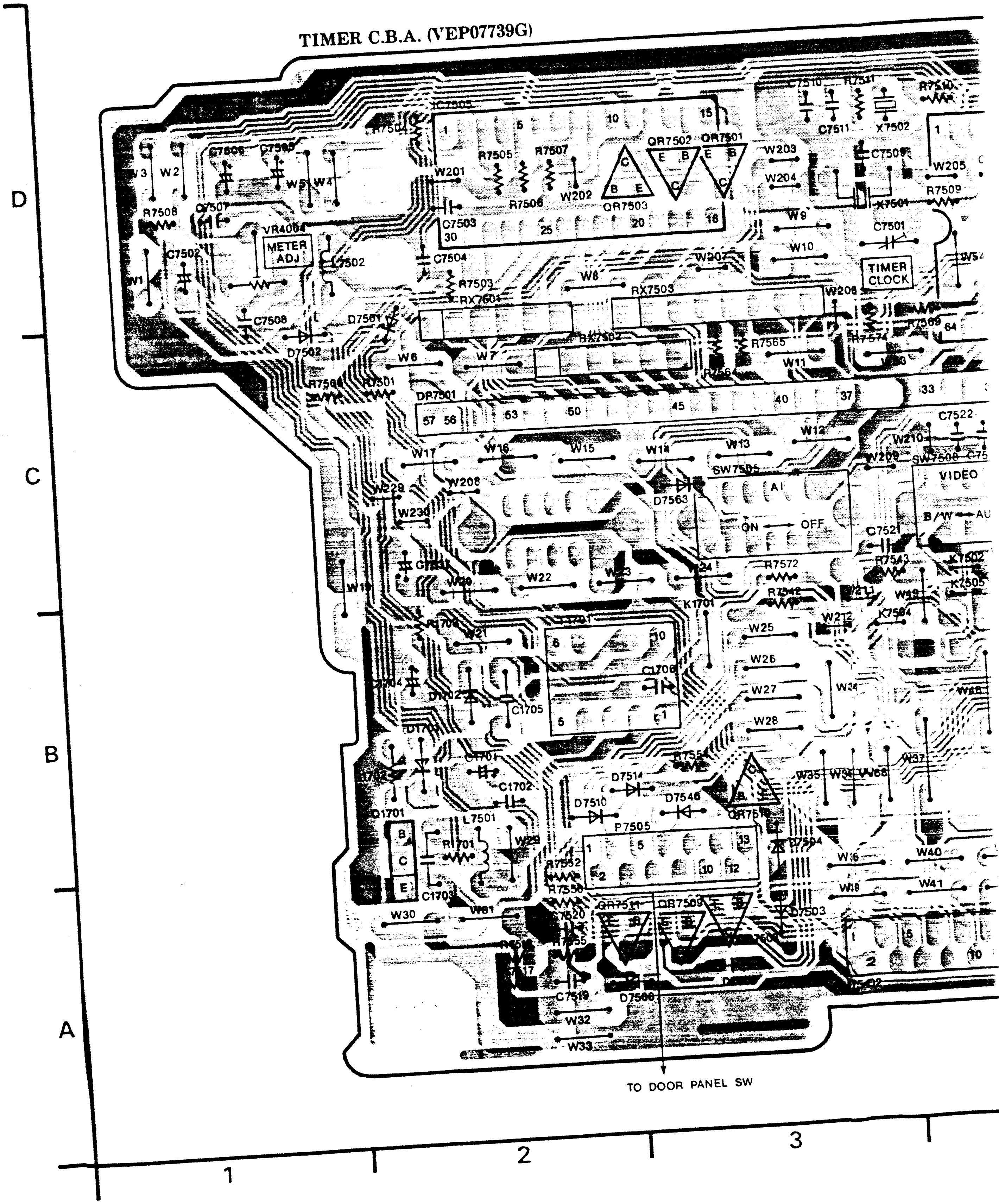

STOP
PAUSE/ STILL
PAL/ MESECAM
PLAYER
ENTER
CH DOWN /(−)
PROG/ CHECK
EDIT (−)
RECORDER
ESCAPE
CH UP /(+)
EDIT MENU
EDIT (+)
TIMER REC
STAND BY
REW
PLAY
REC
AUDIO OUT
MARK IN
PROG. CLEAR
AV LINK
SP/LP (NEXT)
TUNER PRESET
JOG/SHUTTLE ENCODER
FF
MARK OUT
RESET
TIMER REC
SLEEP/ (SHIFT)
CLOCK SET
DOOR PANEL SWITCH UNIT
REC LEVEL
VR6503 50K×2
PICTURE CTL
VR6502 20K
PHONES
VR6501 2K×2
JK6501 PHONES VEJ1419
EJECT
POWER
SW6502 EVQ11409K
SW6501 EVQ11409K
R6505 3300
R6506 330
R6503 270
R6501 3300
R6502 330
R6504 270
C6509 0.01
L6503 220µ
L6504 220µ
L6501 470µ
C6503 0.01
C6504 0.01
C6501 0.022
L6502 470µ
C6502 0.022
JK6508 AV3 S-VIDEO IN
P6502
1 H.P OUT (R)
2 H.P OUT (L)
3 GND (H.P)
4 PICTURE CTL
5 REC VR (L)
6 REC VR (C)
7 REC VR (R)
8 MIC (H)
9 REG 12.3V
10 MIC IN
11 GND (MIC)
TO AUDIO SECTION P4002 (Page:4-14/F2)
JK6507 AV3 VIDEO IN
IC6501 VCR0172
BA3308
MIC AMP L-CH
MIC AMP R-CH
MUTING
GAIN CTL
ALC
GAIN CTL
GND
VCC
C6508 16V33
JK6502 MIC JACK VEJ1429
R6509 2200
L6507 100µ
AV3 AUDIO IN
JK6506 CH2 (R)
C6516 100P
C6515 100P
JK6505 CH1 (L)
R6508 2200
L6508 100µ
0.001
3900
47K
68P
68
4700
560K
47K
1.8
1.8
0
3
12.2
C6507 10V33
C6506 50V3.3
C6505 25V3.3
JK6504 SYNCRO EDIT
JK6503 EDIT 5P

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFFER TO PARTS LIST

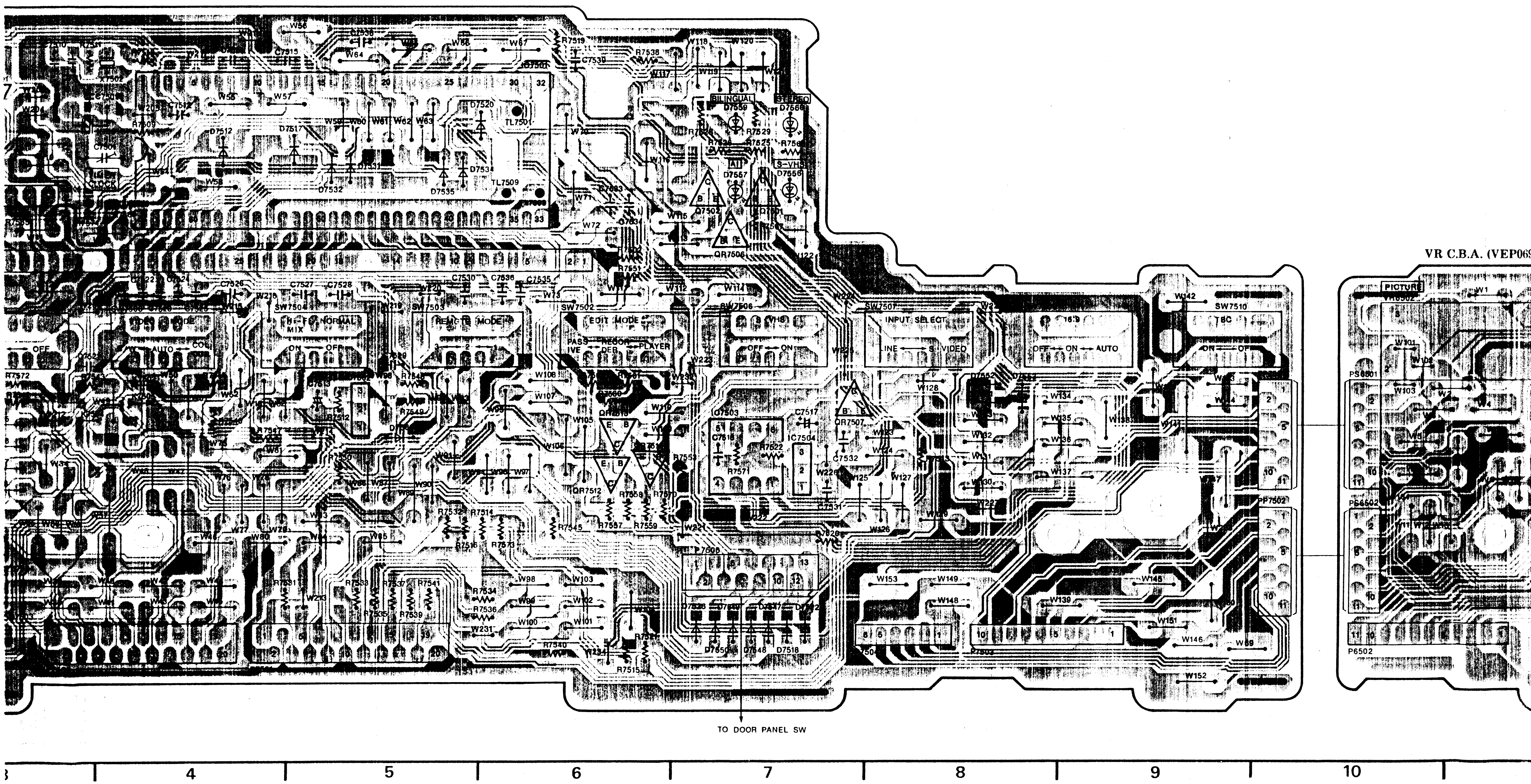
C VOLTAGE ON THIS DIAGRAM IS STOP MODE. (S-VHS: SP MODE)

23 24 25 26 27 28

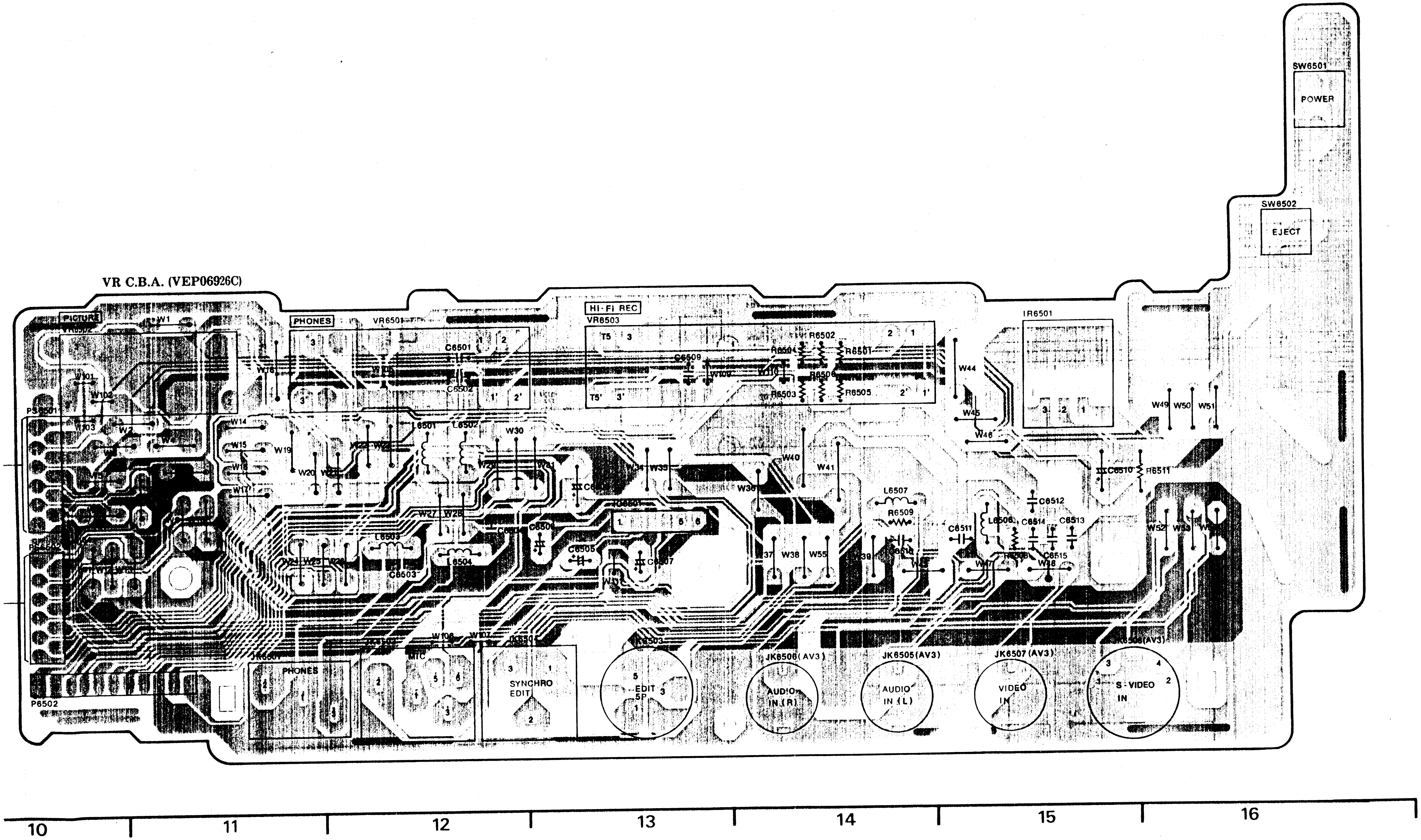
4-26. TIMER C.B.A. (VEP07739G) & VR C.B.A. (VEP06926C)


TIMER C.B.A. (VEP07739G)
IC7505
R7504
R7505
R7507
R7506
QR7502
QR7501
QR7503
W201
W202
W203
W204
W205
C7503
C7504
R7503
RX7501
RX7503
RX7502
C7510
R7511
R7510
C7511
X7502
C7509
R7509
X7501
C7501
TIMER CLOCK
W1
W2
W3
W4
W5
C7506
C7505
R7508
C7507
VR4004
METER ADJ
C7502
C7508
D7501
D7502
W6
W7
W8
W9
W10
W11
W12
W13
W14
W15
W16
W17
W206
W207
W208
W209
W210
R7565
R7564
R7574
R7569
R7566
R7501
DP7501
57
56
53
50
45
40
37
33
C7522
SW7505
SW7508
VIDEO
B/W
AU
D7563
ON
OFF
C7521
R7543
R7572
R7542
K7502
K7505
K7504
K1701
W229
W230
W18
W19
W20
W21
W22
W23
W25
W26
W27
W28
W34
W35
W36
W37
W38
W40
W41
W211
W212
IC1701
C1706
C1705
C1704
D1702
D1701
C1701
C1702
R1701
L7501
Q1701
B
C
E
C1703
W29
W30
W31
W32
W33
D7514
D7510
D7546
QR7510
R7554
P7505
R7552
R7550
D7504
QR7511
QR7509
D7503
R7520
R7555
C7519
D7566
TO DOOR PANEL SW
A
B
C
D
1
2
3

VR C.B.A. (VEP06


W56
C7536
W64
W65
W67
R7519
C7530
R7538
W118
W120
W117
W119
BILINGUAL
STEREO
D7559
D7560
R7529
S-VHS
D7557
D7556
QR7502
QR7501
QR7506
TL7501
D7520
D7534
D7535
TL7509
D7532
D7512
D7517
W55
W57
W58
W59
W60
W61
W62
W63
W70
W71
W72
X7501
CLOCK
R7551
W112
W114
W122
C7527
C7528
C7530
C7536
C7535
SW7501
SW7503
SW7502
SW7506
SW7507
SW7510
Hi-Fi NORMAL
MIX
ON
OFF
REMOTE MODE
EDIT MODE
PASS IVE
RECORDER
PLAYER
VHS
OFF — ON
INPUT SELECT
LINE ← → S-VIDEO
16:9
OFF ← ON ← → AUTO
TBC
ON — OFF
AUTO
OFF
W142
W101
W103
PS6501
PS6502
P7502
PICTURE
VR6502
W1
W2
W3
W4
W108
W107
W105
W106
QR7510
QR7512
QR7503
QR7507
IC7504
C7517
C7532
W128
W132
W134
W135
W136
W137
W131
W130
W125
W127
W126
W221
R7545
R7532
R7514
R7516
R7557
R7558
R7559
R7570
R7571
R7522
R7531
R7533
R7537
R7541
R7534
R7536
R7535
R7539
R7540
R7515
W98
W99
W100
W102
W103
W101
W231
W153
W149
W148
W145
W151
W146
W152
W138
P7506
P7504
P7503
P6502
D7550
D7548
D7518
TO DOOR PANEL SW
4
5
6
7
8
9
10

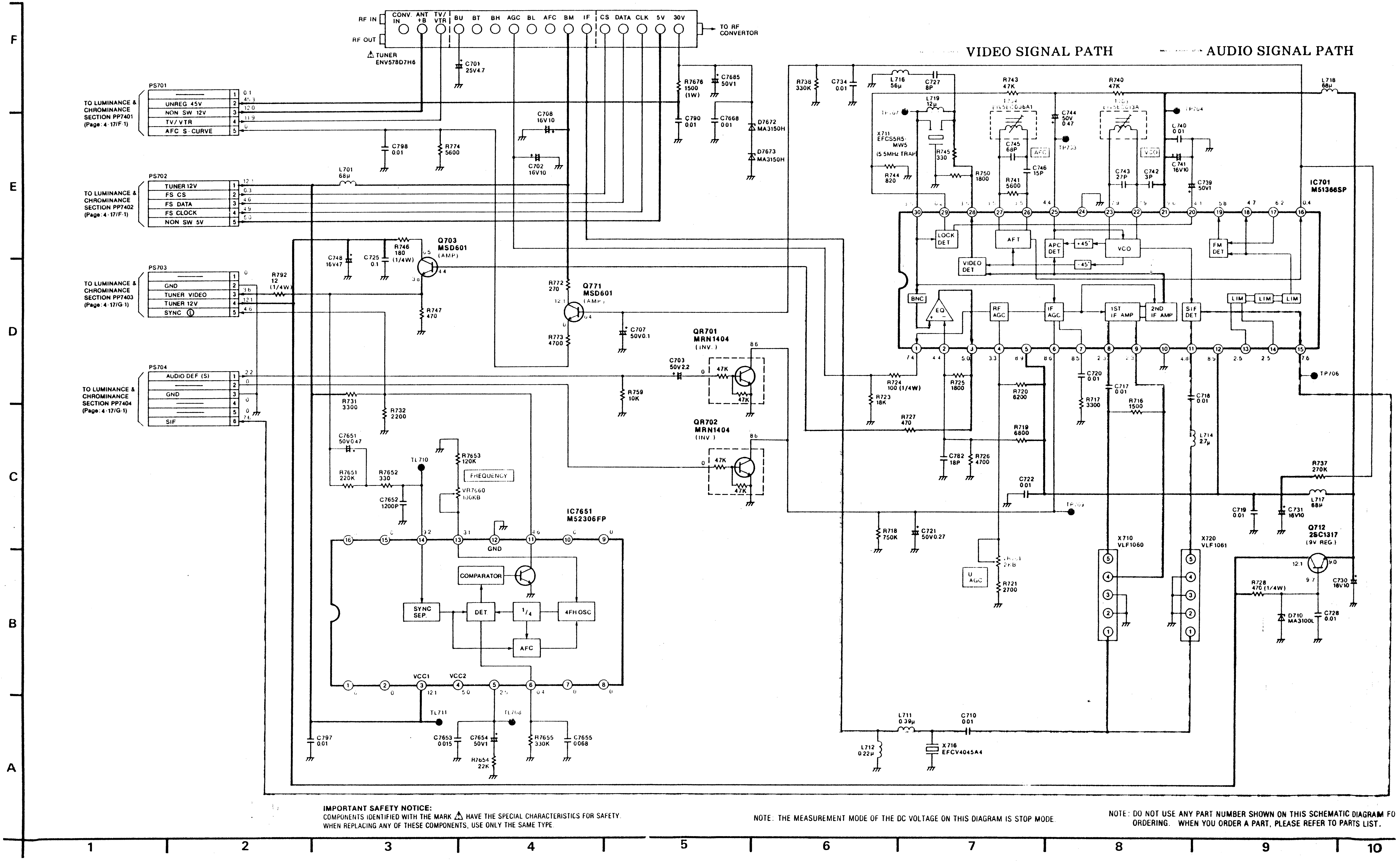
VR C.B.A. (VEP06926C)


PICTURE
VR6502
PHONES
VR6501
HI-FI REC
VR6503
IR6501
SW6501
POWER
SW6502
EJECT
PS6501
PS6502
P6502
IC6501
C6501
C6502
C6503
C6504
C6505
C6507
C6509
C6510
C6511
C6512
C6513
C6514
C6515
L6501
L6502
L6503
L6504
L6506
L6507
R6501
R6502
R6503
R6504
R6505
R6506
R6509
R6511
JK6501
PHONES
MIC
SYNCHRO EDIT
EDIT 5P
JK6506 (AV3)
AUDIO IN (R)
JK6505 (AV3)
AUDIO IN (L)
JK6507 (AV3)
VIDEO IN
S-VIDEO IN
W1
W2
W101
W102
W103
W106
W107
W109
W110
W14
W15
W16
W17
W18
W19
W20
W22
W24
W25
W27
W28
W30
W31
W34
W35
W36
W37
W38
W39
W40
W41
W44
W45
W46
W47
W48
W49
W50
W51
W52
W53
W55
10
11
12
13
14
15
16

TIMER C.B.A. & VR C.B.A.	
Transistor	
Q1701	B-2
Q7501	A-7
Q7502	A-7
Transistor & Resistor	
QR7501	D-3
QR7502	D-3
QR7503	D-3
QR7506	C-7
QR7507	B-7
QR7508	A-3
QR7509	A-3
QR7510	B-3
QR7511	A-2
QR7512	B-6
QR7513	B-6
QR7514	B-6
Integrated Circuit	
IC6501	B-13
IC7501	D-6
IC7502	B-5
IC7503	B-7
IC7504	B-7
IC7505	D-2
Adjustment	
C7501	D-4
VR4004	D-1
VR6501	C-12
VR6502	C-10
VR6503	C-13
Connector	
P6502	A-10
P7501	A-4
P7502	A-4
P7503	A-8
P7504	A-8
P7505	B-2
P7506	B-7
PP7501	B-10
PP7502	B-10
PS6501	B-10
PS6502	B-10

ADDRESS INFORMATION

4-27. TV DEMODULATOR PACK SCHEMATIC DIAGRAM


VIDEO SIGNAL PATH
AUDIO SIGNAL PATH
RF IN
RF OUT
CONV. IN
ANT +B
TV/VTR
BU
BT
BH
AGC
BL
AFC
BM
IF
CS
DATA
CLK
5V
30V
TO RF CONVERTOR
⚠ TUNER ENV578D7H6
PS701
TO LUMINANCE & CHROMINANCE SECTION PP7401 (Page: 4-17/F-1)
UNREG 45V
NON SW 12V
TV/VTR
AFC S-CURVE
PS702
TO LUMINANCE & CHROMINANCE SECTION PP7402 (Page: 4-17/F-1)
TUNER 12V
FS CS
FS DATA
FS CLOCK
NON SW 5V
PS703
TO LUMINANCE & CHROMINANCE SECTION PP7403 (Page: 4-17/G-1)
GND
TUNER VIDEO
TUNER 12V
SYNC
PS704
TO LUMINANCE & CHROMINANCE SECTION PP7404 (Page: 4-17/G-1)
AUDIO DEF (S)
GND
SIF
C701 25V4.7
C798 0.01
R774 5600
C708 16V10
C702 16V10
L701 68μ
R7676 1500 (1W)
C7685 50V1
C790 0.01
C7668 0.01
D7672 MA3150H
D7673 MA3150H
Q703 MSD601 (AMP)
R746 180 (1/4W)
C748 16V47
C725 0.1
R792 12 (1/4W)
R747 470
Q771 MSD601 (AMP)
R772 270
R773 4700
C707 50V0.1
QR701 MRN1404 (INV.)
QR702 MRN1404 (INV.)
C703 50V2.2
R759 10K
47K
R731 3300
R732 2200
C7651 50V0.47
R7651 220K
R7652 330
C7652 1200P
TL710
R7653 120K
FREQUENCY
VR7660 100KB
IC7651 M52306FP
GND
COMPARATOR
SYNC SEP.
DET
1/4
4FH OSC
AFC
VCC1
VCC2
TL711
TL708
C797 0.01
C7653 0.015
C7654 50V1
R7654 22K
R7655 330K
C7655 0.068
R738 330K
C734 0.01
L716 56μ
C727 8P
L719 12μ
X711 EFCS5R5-MW5 (5.5MHz TRAP)
R744 820
R745 330
R750 1800
R743 47K
R741 5600
C745 68P
C746 15P
AFC
C744 50V 0.47
TP703
R740 47K
C743 27P
C742 3P
VCO
C740 0.01
C741 16V10
C739 50V1
TP704
L718 68μ
IC701 M51366SP
LOCK DET
VIDEO DET
AFT
APC DET
+45°
-45°
VCO
FM DET
BNC
EQ
RF AGC
IF AGC
1ST IF AMP
2ND IF AMP
SIF DET
LIM
TP706
R724 100 (1/4W)
R723 18K
R725 1800
R727 470
C782 18P
R726 4700
R720 6200
R719 6800
C720 0.01
R717 3300
C717 0.01
R716 1500
C718 0.01
L714 2.7μ
C722 0.01
TP705
R718 750K
C721 50V0.27
R721 2700
U AGC
X710 VLF1060
X720 VLF1061
R737 270K
L717 68μ
C719 0.01
C731 16V10
Q712 2SC1317 (9V REG.)
R728 470 (1/4W)
D710 MA3100L
C728 0.01
C730 16V10
L711 0.39μ
C710 0.01
L712 0.22μ
X716 EFCV4045A4
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10

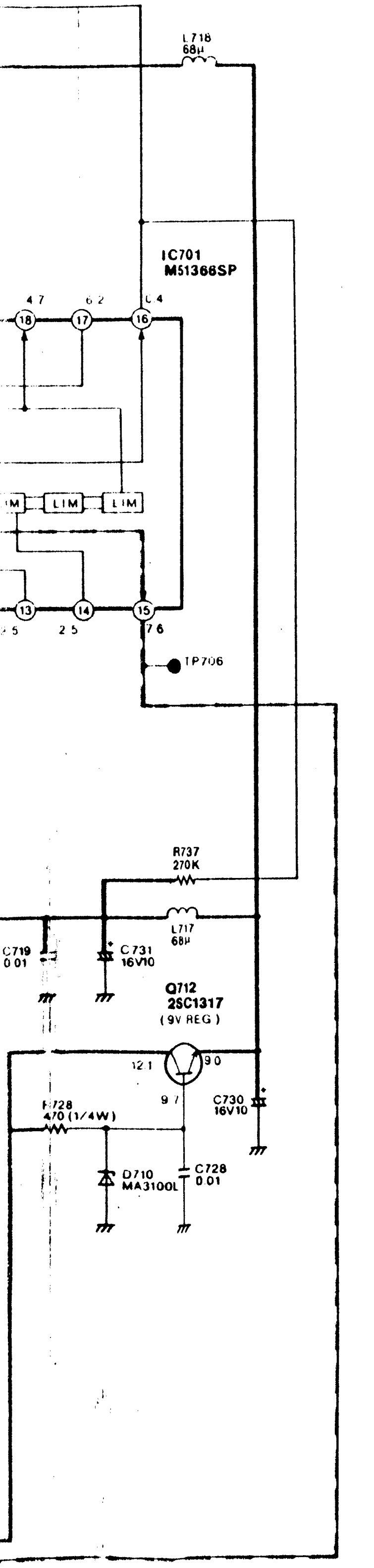
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FO
ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

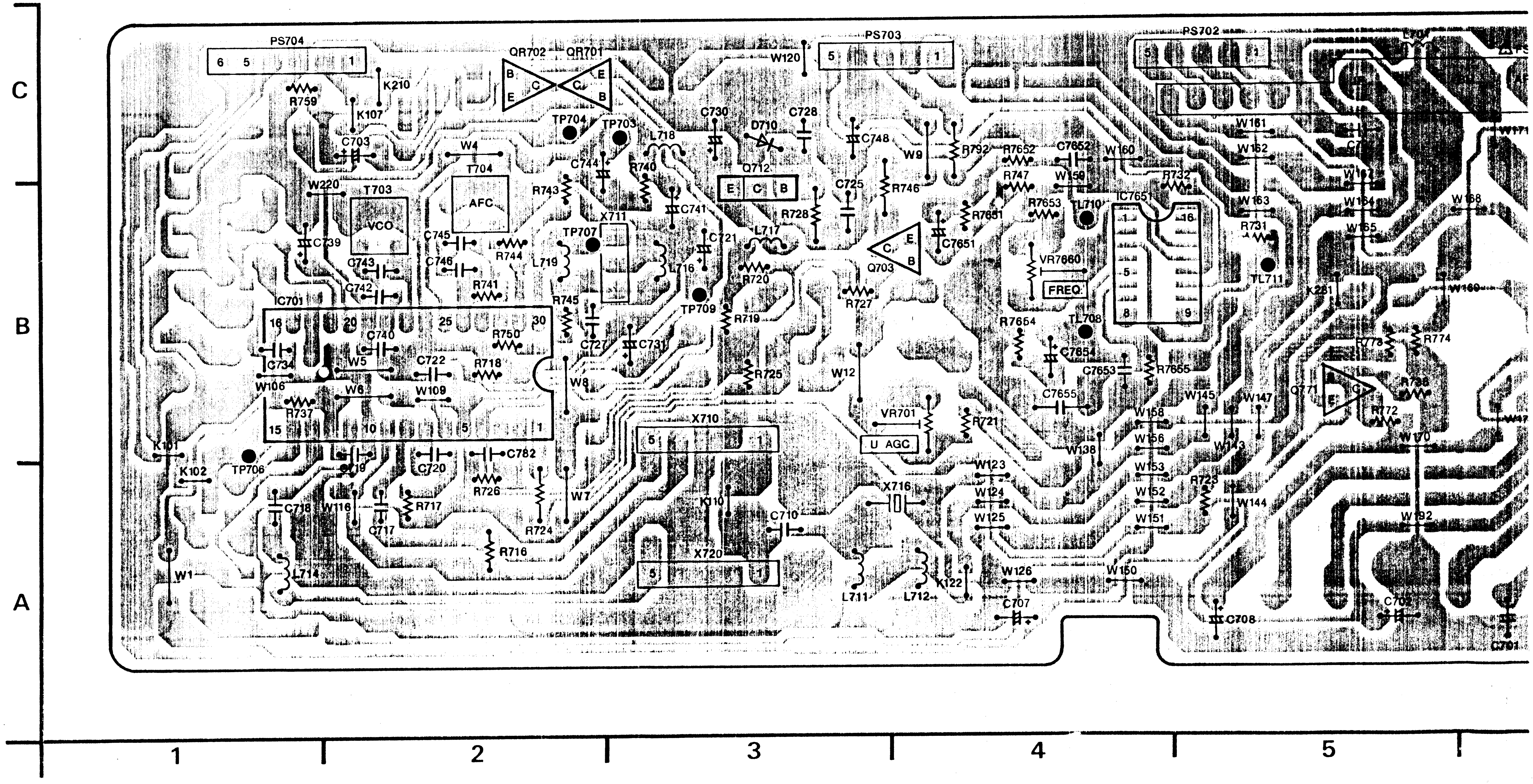
4-28. TV DEMODULATOR PACK C.B.A. (VEP07749A)

IO SIGNAL PATH


L718
68μ
IC701
M51366SP
LIM
LIM
TP706
R737
270K
C719
0.01
C731
16V10
L717
68μ
Q712
2SC1317
(9V REG)
R728
470(1/4W)
D710
MA3100L
C728
0.01
C730
16V10

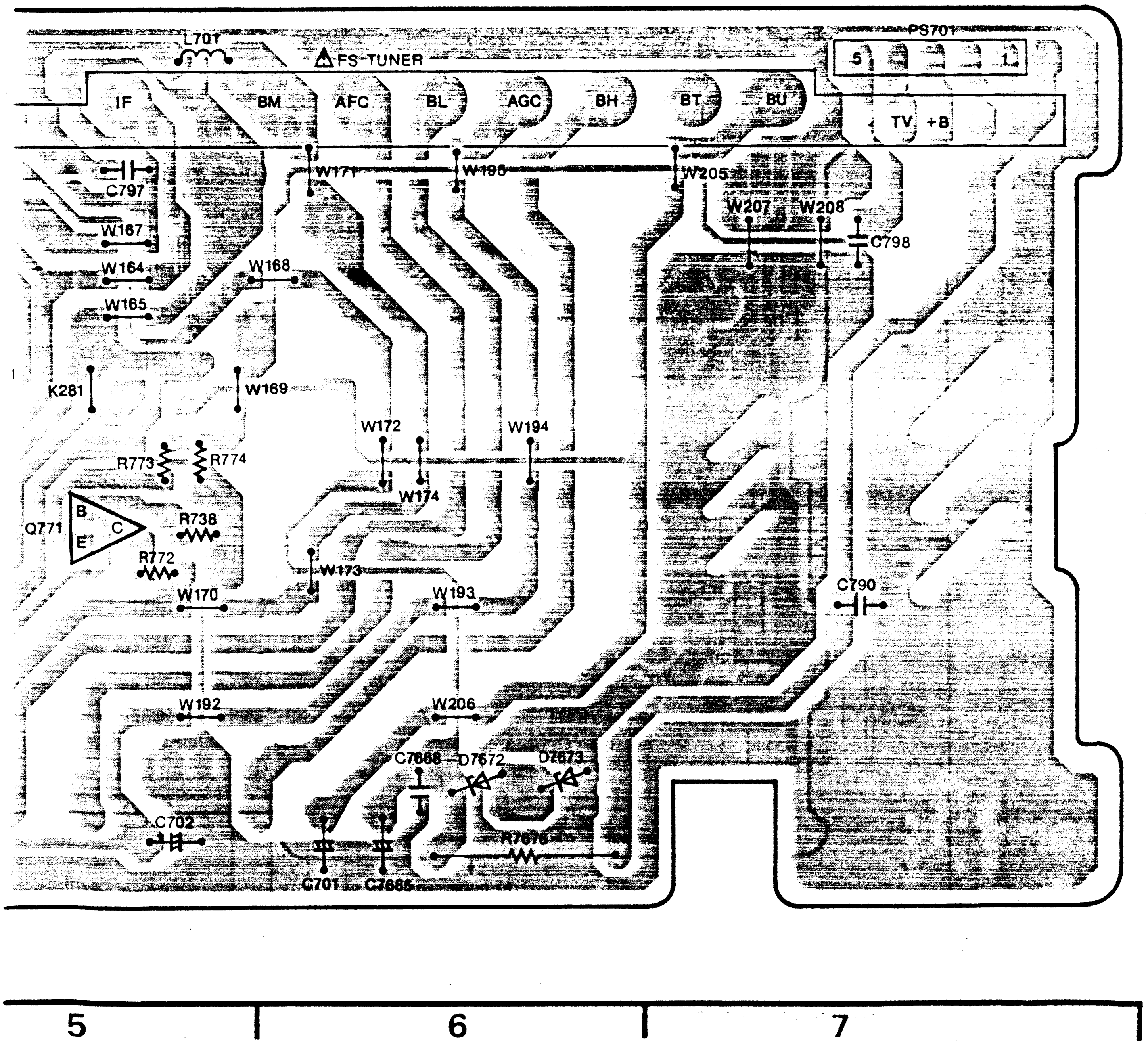
MBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR
DER A PART. PLEASE REFER TO PARTS LIST.

9 10


C
B
A
1
2
3
4
5
PS704
PS703
PS702
QR702
QR701
R759
K210
K107
C703
W4
T704
AFC
W220
T703
VCO
C739
C743
C742
C745
C746
R741
R744
TP704
TP703
C744
L718
R740
R743
C741
TP707
X711
L719
L716
TP709
C721
L717
R720
R745
C727
C731
R719
R725
C730
D710
C728
Q712
E C B
C725
R728
C748
R746
W9
R792
W120
Q703
R727
W12
VR701
U AGC
R721
X710
X720
K110
C710
X716
L711
L712
K122
C707
IC701
C740
C734
W5
C722
R718
R750
W106
W6
W109
R737
W8
TP706
K101
K102
C719
C720
C782
R726
R717
C718
W116
C717
R724
W7
R716
L714
W1
R7652
C7652
W160
R747
W159
R7653
TL710
IC7651
R7651
C7651
VR7660
FREQ.
R7654
TL708
C7654
C7653
R7655
C7655
R732
W161
W162
W163
R731
TL711
W164
W165
W167
W168
W169
K281
R773
R774
Q771
R772
W145
W147
W158
W156
W138
W143
W153
W152
W151
R723
W144
W123
W124
W125
W126
W150
W170
W192
C708
C702
C701
W171

TV DEMODULATOR PACK C.B.A.			
Transistor		TP706	A-1
Q703	B-3	TP707	B-2
Q712	B-3	TP709	B-3
Q771	B-5	**Adjustment**	
Transistor & Resistor		T703	B-2
QR701	C-2	T704	B-2
QR702	C-2	VR701	B-4
Integrated Circuit		VR7660	B-4
IC701	B-1	**Connector**	
IC7651	B-4	PS701	C-7
Test Point		PS702	C-5
TP703	C-3	PS703	C-3
TP704	C-2	PS704	C-1

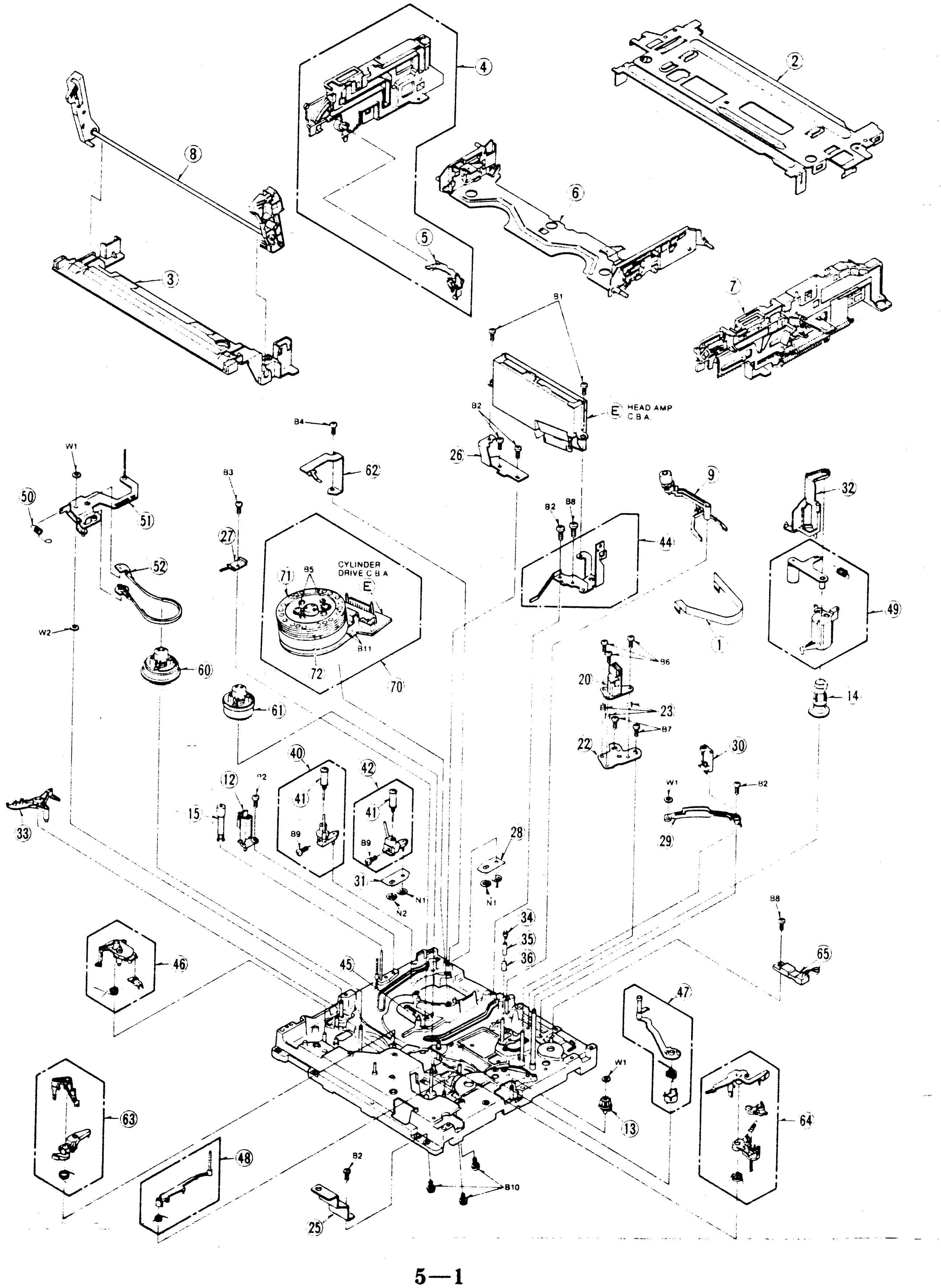
ADDRESS INFORMATION


L701
FS-TUNER
PS701
5
1
IF
BM
AFC
BL
AGC
BH
BT
BU
TV
+B
C797
W171
W195
W205
W207
W208
C798
W167
W164
W168
W165
K281
W169
W172
W194
R773
R774
W174
Q771
B
C
E
R738
R772
W173
W170
W193
C790
W192
W206
C7668
D7672
D7673
C702
R7676
C701
C7665
5
6
7

SECTION 5
EXPLODED VIEWS & PARTS LIST

5-1. EXPLODED VIEW & MECHANICAL REPLACEMENT PARTS LIST

❶ CHASSIS PARTS SECTION (1)


4
2
8
6
5
3
7
B1
E HEAD AMP C.B.A.
B4
B2
26
62
W1
B3
9
32
50
51
B2
B8
44
27
52
CYLINDER DRIVE C.B.A
E
71
B5
49
1
W2
B11
72
70
B6
20
60
61
23
B7
14
22
30
40
42
12
B2
W1
B2
41
41
15
B9
B9
29
33
28
31
N1
N2
N1
B8
34
35
36
65
46
45
47
W1
13
63
64
48
B2
B10
25

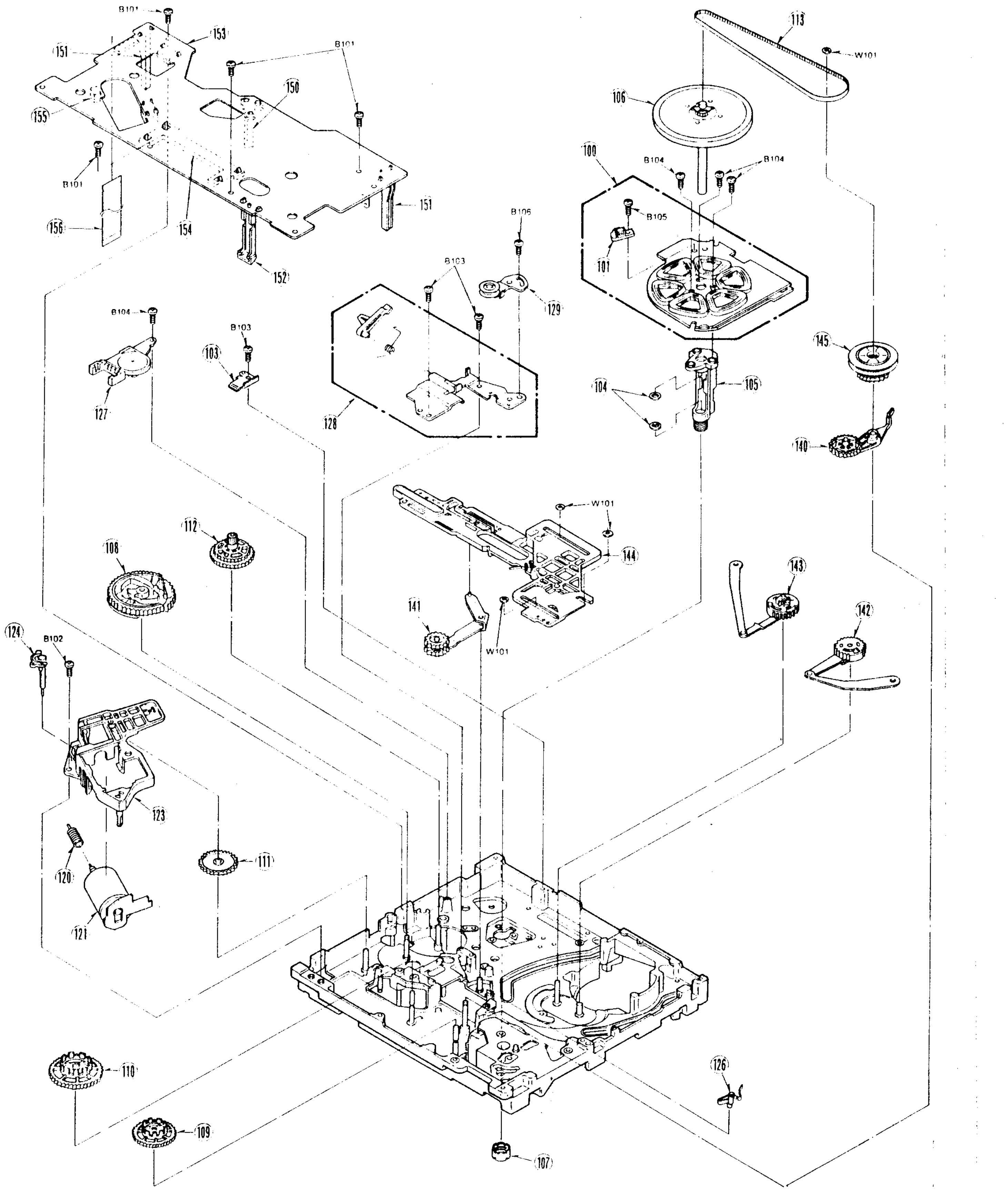
Note:1.* Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
1(1)		VWJ0617	FLEXIBLE CABLE (6P)	1	P1003-P1501
2(1)		VMA8644	TOP PLATE	1	
3(1)		VMA8787	CASSETTE GUIDE	1	
4(1)		VXA4660	SIDE PLATE (L) UNIT	1	
5(1)		VXL2250	OPENER LEVER UNIT	1	
6(1)		VXA4661	CASSETTE HOLDER PLATE UNIT	1	
7(1)		VXA4806	SIDE PLATE (R) UNIT	1	
8(1)		VXP1339	MAIN SHAFT UNIT	1	
9(1)		VXL2380	CLEANER ARM UNIT	1	
12(1)		VBS0050	FE HEAD	1	
13(1)		VDG0871	CARRIAGE CONNECTION GEAR	1	
14(1)		VDG0886	PINCH CAM GEAR	1	
15(1)		VXP1402	IMPEDANCE ROLLER UNIT	1	
20(1)		VED0205	A/C HEAD (1) UNIT	1	
22(1)		VMA8624	A/C HEAD BASE	1	
23(1)		VMB2515	A/C HEAD SPRING	3	
25(1)		VMA8761	MOUNT ANGLE	1	
26(1)		VMA8763	HEAD AMP MOUNT ANGLE (L)	1	
27(1)		VMC0917	EARTH SPRING	1	
28(1)		VMA8874	INCLIND BASE HOLDER (S)	1	
29(1)		VMD2078	P5 STOPPER BASE	1	
30(1)		VXA4927	P5 POST STOPPER	1	
31(1)		VMA8873	INCLIND BASE HOLDER (T)	1	
32(1)		VMD2101	OPENER PIECE	1	
33(1)		VML2776	TENSION SPRING ARM	1	
34(1)		VMX1544	P4 UPPER LIMITER	1	
35(1)		VMX2175	P4 SLEEVE	1	
36(1)		VMX2176	P4 LOWER LIMITER	1	
40(1)		VXA5245KIT	INCLINED BASE (S) UNIT	1	OR VXA4982KIT
41(1)		VXP1415	ROLLER POST	2	
42(1)		VXA5247KIT	INCLINED BASE (T) UNIT	1	OR VXA4984KIT
44(1)		VXA4974	HEAD AMP MOUNT ANGLE (R) U.	1	
45(1)		VMS5383	CASSETTE POSITION FIXTURE	1	
46(1)		VXL2310	REVIEW ARM UNIT	1	
47(1)		VXL2306	P5 ARM UNIT	1	
48(1)		VXL2243	TAKE UP TENSION REGULATOR ARM UNIT	1	
49(1)		VXL2246	PINCH ARM UNIT	1	
50(1)		VMB2434	TENSION SPRING	1	
51(1)		VXL2309	TENSION ARM (1) UNIT	1	
52(1)		VXZ0310	TENSION BAND UNIT	1	
60(1)		VXR0221	SUPPLY REEL TABLE UNIT	1	
61(1)		VXR0222	TAKE UP REEL TABLE UNIT	1	
62(1)		VXS0113	EARTH PLATE	1	
63(1)		VXZ0312	SUPPLY BRAKE ARM UNIT	1	
64(1)		VXZ0313	TAKE UP BRAKE ARM UNIT	1	
65(1)		2SW941PSW	POWER TRANSISTOR	1	
70(1)		VEG1133	CYLINDER UNIT	1	
71(1)		VEH0651	UPPER CYLINDER UNIT	1	
72(1)		VSC3940	CYLINDER SHIELD PLATE	1	
B1(1)		VHD0773	SCREW	2	
B2(1)		XTV26+6F	SCREW	6	
B3(1)		XTV26+4F	SCREW	1	
B4(1)		XTN3+6FFZ	SCREW	1	
B5(1)		VHD0553	SCREW	2	
B6(1)		VHD0762	SCREW	3	
B7(1)		XTV26+6FZ	SCREW	2	
B8(1)		XTV26+8F	SCREW	2	
B9(1)		XQN2+AJ4	SCREW	2	
B10(1)		VHD0342	SCREW	3	
B11(1)		XYNV0029	SCREW	2	
N1(1)		VHN0192	NUT	3	
N2(1)		VHN0193	NUT	1	
W1(1)		VMX2208	WASHER	3	
W2(1)		XWGV26D5G	WASHER	1	

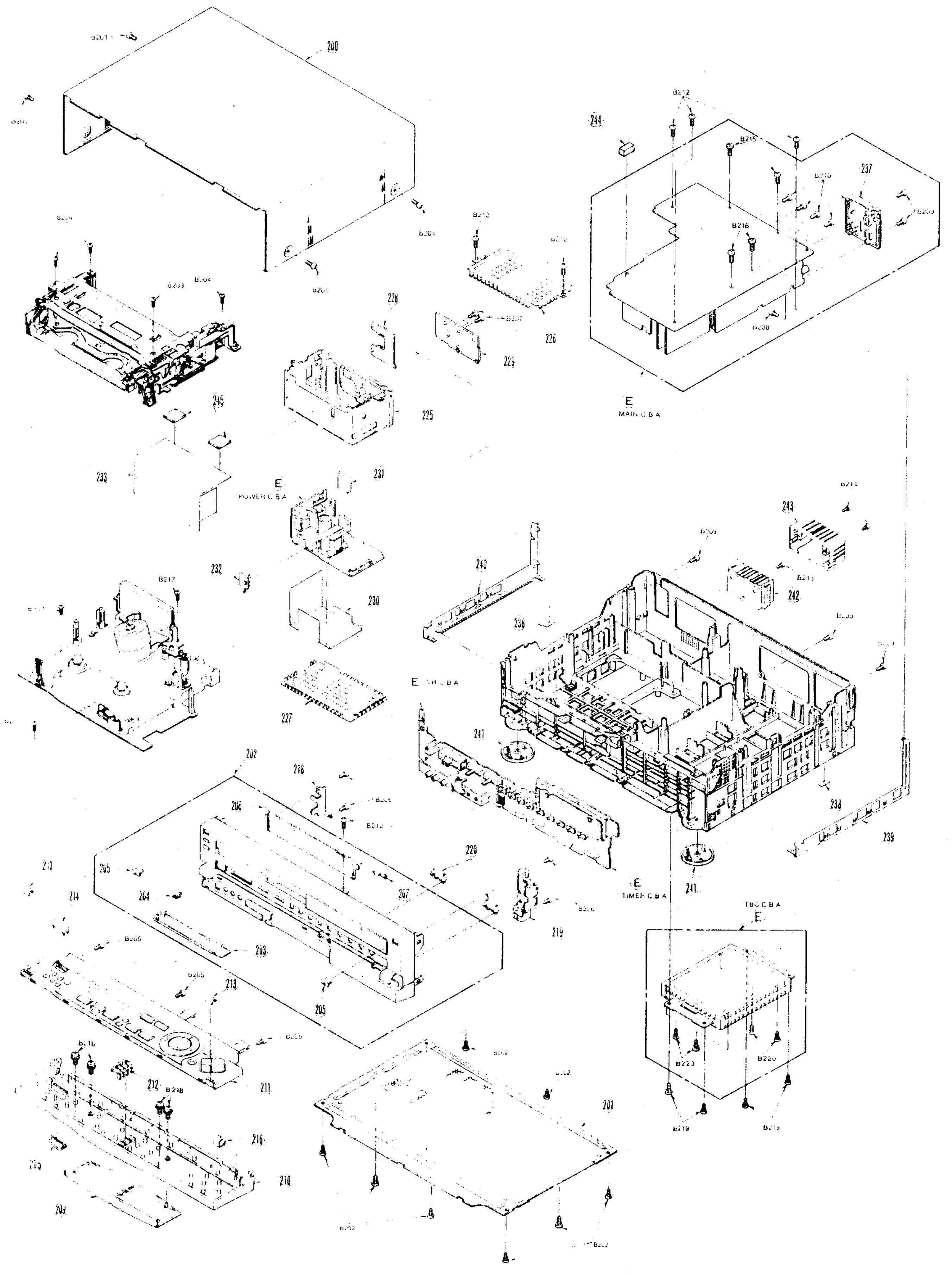
Note:1.* Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
100(2)		VEK5927	STATOR UNIT	1	
101(2)		VBK0061	FG HEAD	1	
103(2)		VMA8930	ROTOR STOPPER	1	
104(2)		VMX1927	OIL SEAL	2	
105(2)		VXD0140	HOUSING UNIT	1	
106(2)		VXP1350	ROTOR UNIT	1	
107(2)		VXQ0297	THRUST SCREW UNIT	1	
108(2)		VDG0913	MAIN CAM GEAR	1	
109(2)		VDG0956	SUPPLY REEL GEAR	1	
110(2)		VDG0957	TAKE UP REEL GEAR	1	
111(2)		VDG0868	WORM WHEEL GEAR	1	
112(2)		VDG0885	SUB CAM GEAR	1	
113(2)		VDV0235	TIMING BELT	1	
120(2)		VDG0866	WORM GEAR	1	
121(2)		VEM0427	LOADING MOTOR (1) UNIT	1	
123(2)		VMD1942	MOTOR BRACKET	1	
124(2)		VMD2153	S-VHS SW ACTUATER	1	
126(2)		VML2725	IDLER CONTROL LEVER	1	
127(2)		VSS0365	MODE SW	1	
128(2)		VXA5138	SS BRAKE BASE UNIT	1	
129(2)		VXA4799	TENSION ROLLER UNIT	1	
140(2)		VXL2378	IDLER ARM UNIT	1	
141(2)		VXL2372	DIRECT LEVER UNIT	1	
142(2)		VXL2299	SUPPLY LOADING ARM UNIT	1	
143(2)		VXL2300	TAKE UP LOADING ARM UNIT	1	
144(2)		VXL2307	MAIN LEVER UNIT	1	
145(2)		VXP1409	CENTRE CLUTCH	1	
150(2)		VMD1926	LED HOLDER	1	
151(2)		VMD1927	PHOTO TRANSISTOR HOLDER	2	
152(2)		VES0695	SAFETY TAB SW	1	
153(2)		VJB00T87	MECHANISM CONNECTION C.B.	1	ELECTRICAL PARTS ON THE C.B.A. ARE LISTED ON ELECTRICAL PARTS LIST.
154(2)		VMD2029	REEL SHAFT GUIDE	1	
155(2)		VST0176	S-VHS CASSETTE SW	1	
156(2)		VWJ0777	FLEXIBLE CABLE (14P)	1	(P6001-P1505)
B101(2)		VHD0772	SCREW	4	
B102(2)		XTV26+8F	SCREW	1	
B103(2)		XTV26+6F	SCREW	3	
B104(2)		VHD0753	SCREW	4	
B105(2)		VHD0754	SCREW	1	
B106(2)		XSB26+4FZ	SCREW	1	
W101(2)		VMX2208	WASHER	4	

❷ CHASSIS PARTS SECTION (2)



❸ CASING PARTS SECTION



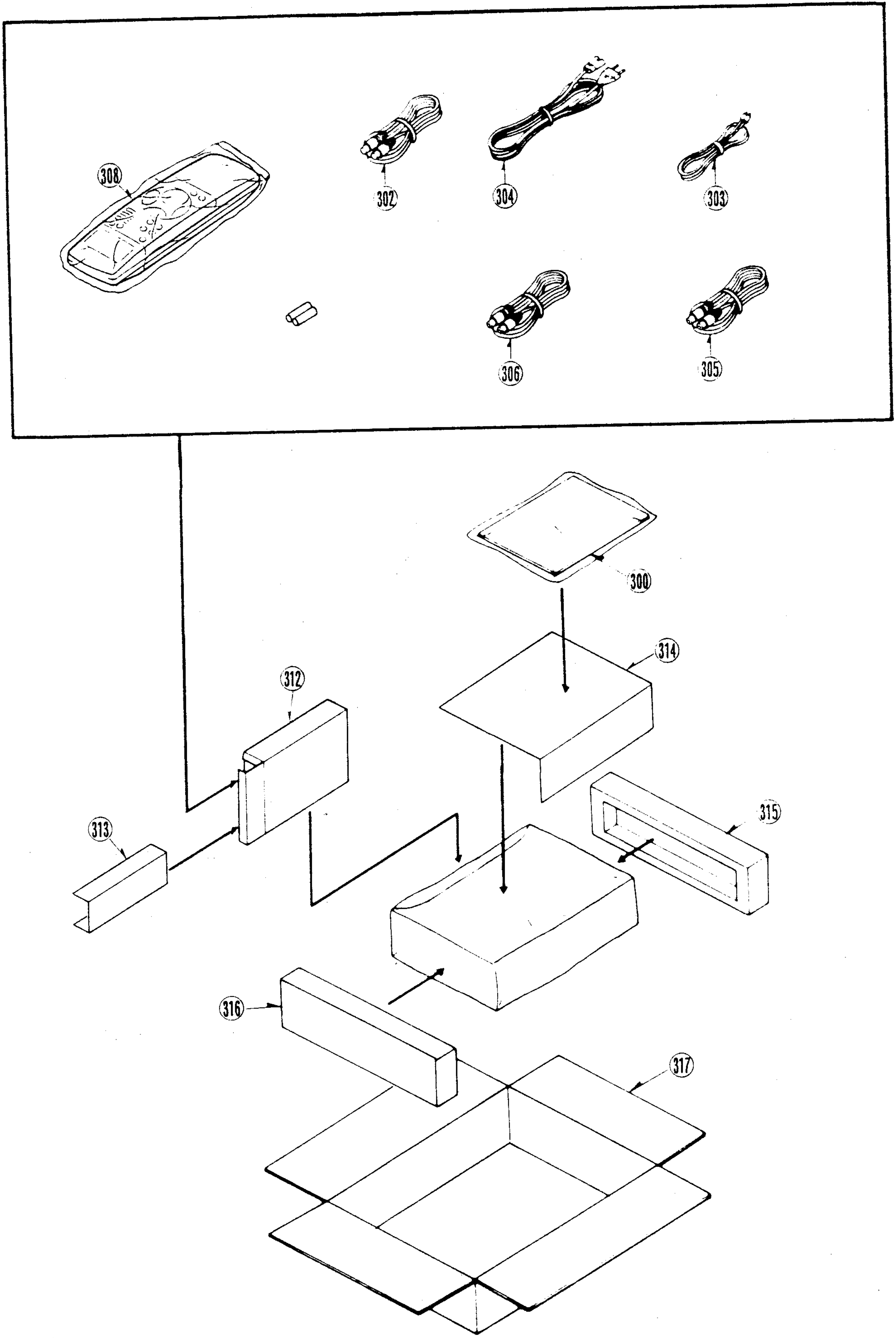
Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
200(3)		VGM1032	TOP PANEL	1	
201(3)		VKU0387	BOTTOM PLATE	1	
202(3)		VYP5516	FRONT PANEL (1) UNIT	1	
203(3)		VYF2107	SUB DOOR UNIT	1	
204(3)		VGQ0550	DOOR LOCK PIECE	1	
205(3)		VGQ2216	DOOR MAGNET	2	
206(3)		VKF2118	BLINDER PANEL	1	
207(3)		VMB2521	BLINDER SPRING	1	
209(3)		VGP3634	DOOR SUB PANEL	1	
210(3)		VYC0610	DOOR PANEL (1) UNIT	1	
211(3)		ESU19555G	DOOR PANEL SW UNIT	1	
212(3)		VGL0579	DOOR PANEL LIGHT	1	
213(3)		VMP4182	MAGNET ANGLE	2	
214(3)		VKW1333	IR WINDOW (INSIDE)	1	
215(3)		VKW1827	IR WINDOW (OUTSIDE)	1	
216(3)		VDG0954	DOOR GEAR	1	
218(3)		VXA5132	DOOR ANGLE (L) UNIT	1	
219(3)		VXA5130	DOOR ANGLE (R) UNIT	1	
220(3)		VGQ2807	FLEXIBLE CABLE HOLDER	2	
225(3)		VXA5129	POWER SHIELD PLATE (MAIN)U.	1	
226(3)		VSC2621	POWER SHIELD PLATE (TOP)	1	
227(3)		VSC2622	POWER SHIELD PLATE (BOTTOM)	1	
228(3)		VMP4183	INLET ANGLE	1	
229(3)		VSC3938	HEAT SINK (P)	1	
230(3)		VMZ2207	POWER BARRIER	1	<!>
231(3)		VMZ2208	INSULATION CAP	1	<!>
232(3)		VGQ3401	IC HOLDER	1	
233(3)		VMZ2257	SHIELD BARRIER	1	
237(3)		VJH0683	RF ANT TERMINAL PLATE	1	
238(3)		VKA0122	FOOT	2	
239(3)		VMP4448	SIDE ANGLE (R)	1	
240(3)		VMP4449	SIDE ANGLE (L)	1	
241(3)		VKA0165	LEG	2	
242(3)		VSC2623	HEAT SINK (O)	1	
243(3)		VKF1150	HEAT SINK COVER	1	
244(3)		VMT0199	C.B.A. SPACER	1	
245(3)		VMT0547	POWER CUSHION	2	
B201(3)		XTW3+10TFZ	SCREW	4	
B202(3)		VHD0059	SCREW	8	
B203(3)		XTV26+10F	SCREW	1	
B204(3)		XTV26+8FR	SCREW	3	
B205(3)		XTN26+8GFZ	SCREW	3	
B206(3)		XTV3+8G	SCREW	4	
B207(3)		XTS3+8J	SCREW	2	
B208(3)		XTV3+6F	SCREW	1	
B209(3)		XTV3+12JFZ	SCREW	5	
B210(3)		XTV3+8GFZ	SCREW	4	
B211(3)		VHD0168	SCREW	2	
B212(3)		VHD0773	SCREW	6	
B213(3)		XYC3+FF12FR	SCREW	1	
B214(3)		XTV3+14FZ	SCREW	2	
B215(3)		XTV3+10J	SCREW	2	
B216(3)		XTV3+8J	SCREW	2	
B217(3)		VHD0839	SCREW	1	
B218(3)		XYC2+BG5	SCREW	4	
B219(3)		XTV3+10GR	SCREW	4	
B220(3)		XTN3+6F	SCREW	4	

Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
300(4)		VQT5458	OPERATING INSTRUCTIONS	1	<!>
			(ENGLISH/GERMAN)		
300(4)		VQT5459	OPERATING INSTRUCTIONS	1	<!>
			(ITALIAN)		
300(4)		VQT5460	OPERATING INSTRUCTIONS	1	<!>
			(FRENCH/DUTCH)		
302(4)		VJA0710	DIN RF CABLE	1	
303(4)		VJA0231	AUDIO CABLE	1	
304(4)		VJA0665	AC CORD	1	<!>
305(4)		VJA0787	EDIT 5P CABLE	1	
306(4)		VJA0748	S-VIDEO 4P CABLE	1	
308(4)		VEQ1562	REMOTE CONTROLLER	1	
312(4)		VPK0831	ACCESSORIES PACKING	1	
313(4)		VPN3773	ACCESSORIES PAD	1	
314(4)		VPN3779	UPPER PAD	1	
315(4)		VPN3763	CUSHION (R)	1	
316(4)		VPN3764	CUSHION (L)	1	
317(4)		VPG7193	PACKING	1	
			SERVICE FIXTURES & TOOLS		
		VFJ8125H3F	VHS ALIGNMENT TAPE(PAL)	1	
		VFK0335	RETAINING RING REMOVER	1	
			(3mm/4mm)		
		VFK0329	POST ADJUSTMENT SCREWDRIVER	1	
		VFK0326	HEX WRENCH SET	1	
		VFK0132	BACK TENSION METER	1	
		VFK27	HEAD CLEANING STICK	1	
		MOR265	MORLYTONE GREASE	1	
		VFK0341	UPPER CYLINDER REMOVER	1	
		VFK0680	WHITE GREASE	1	
		VFK0851	CENTRE FIXING TOOL	1	
		VFK0330	FINE ADJUSTMENT GEAR DRIVER	1	
		VFK0678	18P EXTENSION CABLE	2	
		VFK0764	10P EXTENSION CABLE	1	
		VFK0916	17P EXTENSION CABLE	1	
		VFK0937	9P EXTENSION CABLE	1	
		VFK0938	12P EXTENSION CABLE	2	
		VFK0939	13P EXTENSION CABLE	1	
		VFK0940	14P EXTENSION CABLE	1	

❹ PACKING PARTS SECTION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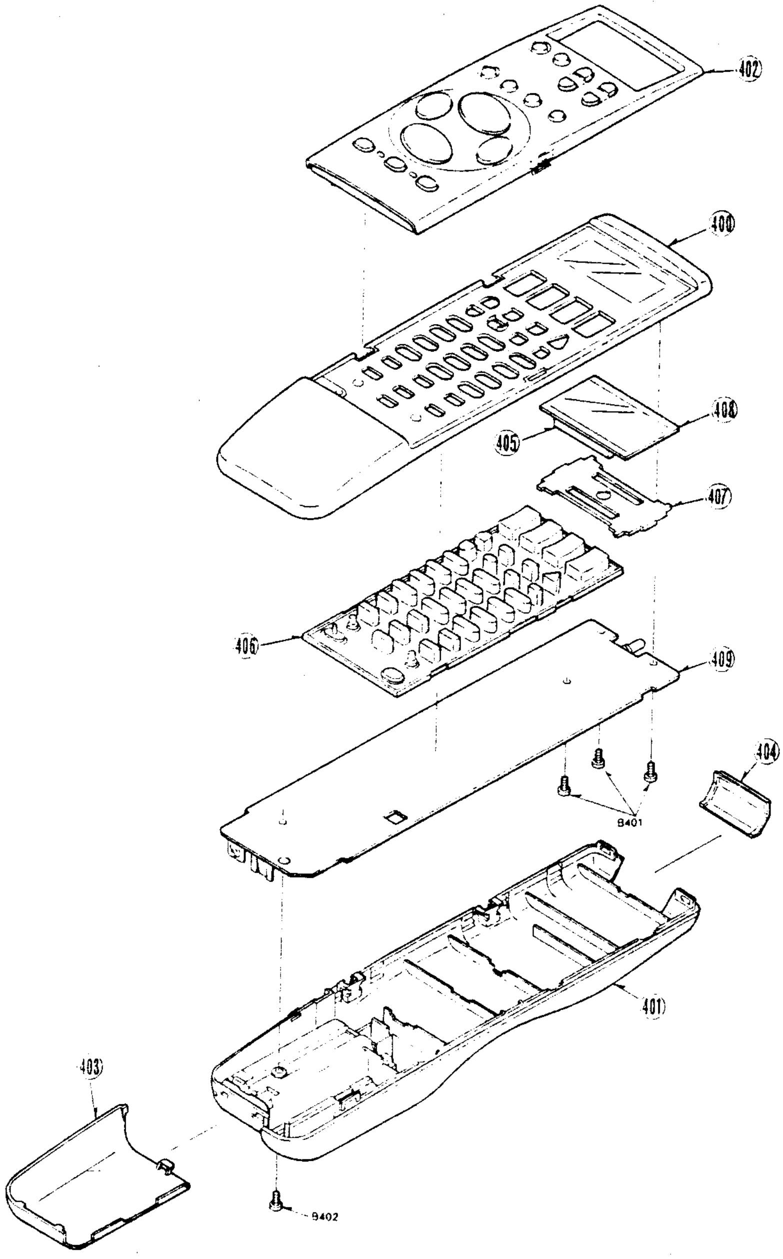
❺ REMOTE CONTROLLER UNIT



Note: 1. * Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
400(5)		VYK5654	TOP COVER UNIT	1	
401(5)		VYK5446	BOTTOM COVER UNIT	1	
402(5)		VYK5725	DOOR PANEL UNIT	1	
403(5)		VKF2115	BATTERY COVER	1	
404(5)		VKW1802	IR WINDOW	1	
405(5)		VSQ0830	CONDUCTIVE RUBBER	2	
406(5)		VSP0772	RUBBER CONTACT	1	
407(5)		VSQ0829	LCD SPACER	1	
408(5)		VSL0319A	LCD	1	
409(5)		----------	REMOTE CONTROLLER C.B.A.	1	THE C.B.A. IS NOT
					SUPPLIED AS SPARE
					PART.
B401(5)		XTB2+6G	SCREW	4	
B402(5)		XTB2+8GFZ	SCREW	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks

5-2. ELECTRICAL REPLACEMENT PARTS LIST

Note: 1. Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE : Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components, use only the same type.
3. Unless otherwise specified, All resistors are in OHMS , K=1,000 OHMS. All capacitors are in MICRO-FARADS(uf), P=uuF.
4. The P.C.Board units marked width'■'show below the main assembled parts.
5. The marking(RTL) indicates the retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.

Ref. No.		Part No.	Part Name & Description	Pcs	Remarks
		VEP03A37E	MAIN C.B.A. (Page:5-8)	1	(RTL) INCLUDING THE TV DEMODULATOR PACK (VEP07749A) CAP DRIVE PACK C.B.A. (VEP02412B), LUMINANCE & CHROMINANCE PACK C.B.A. (VEP03A61A), SUB LUMINANCE & CHROMINANCE PACK C.B.A. (VEP03A62A), REC/RF AMP PACK C.B.A. (VEP03A90A), INPUT/OUTPUT PACK C.B.A. (VEP03A72A), Hi-Fi AUDIO PACK C.B.A. (VEP04410E), SUB Hi-Fi AUDIO PACK C.B.A. (VEP04417B), VPS PACK C.B.A. (VEP07538J), DECORDER PACK C.B.A. (VEP07671A).
		VEP07749A	TV DEMODULATOR PACK C.B.A.	1	(RTL) INCLUDED IN MAIN C.B.A. (VEP03A37E).
		VEP02412B	CAP DRIVE PACK C.B.A.	1	(RTL) INCLUDED IN MAIN C.B.A. (VEP03A37E).
		VEP03A61A	LUMINANCE & CHROMINANCE PACK C.B.A.	1	(RTL) INCLUDED IN MAIN C.B.A. (VEP03A37E).
		VEP03A62A	SUB LUMINANCE & CHROMINANCE PACK C.B.A.	1	(RTL) INCLUDED IN MAIN C.B.A. (VEP03A37E).
		VEP03A90A	REC/RF AMP PACK C.B.A.	1	(RTL) INCLUDED IN MAIN C.B.A. (VEP03A37E).
		VEP03A72A	INPUT/OUTPUT PACK C.B.A.	1	(RTL) INCLUDED IN MAIN C.B.A. (VEP03A37E).
		VEP04410E	Hi-Fi AUDIO PACK C.B.A.	1	(RTL) INCLUDED IN MAIN C.B.A. (VEP03A37E).
		VEP04417B	SUB Hi-Fi AUDIO PACK C.B.A.	1	(RTL) INCLUDED IN MAIN C.B.A. (VEP03A37E).
		VEP07538J	VPS PACK C.B.A.	1	(RTL) INCLUDED IN MAIN C.B.A. (VEP03A37E).
		VEP07671A	DECORDER PACK C.B.A.	1	(RTL) INCLUDED IN MAIN C.B.A. (VEP03A37E).

Ref. No.		Part No.	Part Name & Description	Pcs	Remarks
		VEP03A53A	TBC C.B.A. (Page:5-19)	1	(RTL)
		VEP05176G	HEAD AMP C.B.A. (Page:5-21)	1	(RTL)
		VEP06926C	VR C.B.A. (Page:5-21)	1	(RTL)
		VEP07739G	TIMER C.B.A. (Page:5-22)	1	(RTL)
		VEP01558C	POWER C.B.A. (Page:5-23)	1	(RTL)<!>
		VEX0126	CYLINDER DRIVE C.B.A. (Page:5-23)	1	(RTL)
		----------	MECHANISM CONNECTION C.B.A. (Page:5-23)	1	NOT SUPPLIED AS C.B.A. (C.B. IS LISTED ON MECHANICAL PARTS LIST)
		----------	MOTOR C.B.A. (Page:5-24)	1	C.B.A. IS INCLUDED IN LOADING MOTOR (1 UNIT (VEM0427)
		ENC17984	RF CONVERTER	1	<!>
		ENV578D7H6	TUNER	1	<!>
F1101		XBA2C16TH15	FUSE	1	<!>
	■	VEP03A37E	MAIN C.B.A.		(RTL)
C301		ECUM1H820JCN	C.CAPACITOR CH 50V 82P	1	
C303		ECUM1H180JCN	C.CAPACITOR CH 50V 18P	1	
C305		ECUM1H560JCN	C.CAPACITOR CH 50V 56P	1	
C306		ECUM1H150JCN	C.CAPACITOR CH 50V 15P	1	
C307		ECUM1H470JCN	C.CAPACITOR CH 50V 47P	1	
C308		ECUM1H050CCN	C.CAPACITOR CH 50V 5P	1	
C309		ECUM1H562KBN	C.CAPACITOR CH 50V 5600P	1	
C310		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C311		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C312		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C313		ECEA0JKA101	E.CAPACITOR 6.3V 100U	1	
C314		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C315,16		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C317		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C318		ECEA0JKA101	E.CAPACITOR 6.3V 100U	1	
C319		ECUM1H080DCN	C.CAPACITOR CH 50V 8P	1	
C321,22		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	2	
C324		ECEA0JKA101	E.CAPACITOR 6.3V 100U	1	
C325,26		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C329		ECQV1H334JM	P.CAPACITOR 50V 0.33U	1	
C331		ECEA1CKA470	E.CAPACITOR 16V 47U	1	
C332,33		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C334		ECEA1CKA470	E.CAPACITOR 16V 47U	1	
C335		ECEA0JKA220	E.CAPACITOR 6.3V 22U	1	
C336		ECEA1EKN4R7	E.CAPACITOR 25V 4.7U	1	
C337		ECEA1HKN010	E.CAPACITOR 50V 1U	1	
C338		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C339		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C340		ECEA0JKA220	E.CAPACITOR 6.3V 22U	1	
C341		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C342		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C343		ECEA1CKA470	E.CAPACITOR 16V 47U	1	
C344		ECEA1CKN100	E.CAPACITOR 16V 10U	1	
C345,46		ECEA1CKA100	E.CAPACITOR 16V 10U	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C348		ECEA1HKA010	E.CAPACITOR 50V 1U	1	
C349		ECEA1CKA101	E.CAPACITOR 16V 100U	1	
C350		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C701		ECEA1EK4R7	E.CAPACITOR 25V 4.7U	1	
C702		ECEA1CKS100	E.CAPACITOR 16V 10U	1	
C703		ECEA1HK2R2	E.CAPACITOR 50V 2.2U	1	
C707		ECEA1HK0R1	E.CAPACITOR 50V 0.1U	1	
C708		ECEA1CKS100	E.CAPACITOR 16V 10U	1	
C710		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C717-20		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	4	
C721		ECEA1HKR27K	E.CAPACITOR 50V 0.27U	1	
C722		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C725		ECQV1H104JM	P.CAPACITOR 50V 0.1U	1	
C727		ECUM1H080DCN	C.CAPACITOR CH 50V 80P	1	
C728		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C730		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C731		ECEA1CKS100	E.CAPACITOR 16V 10U	1	
C734		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C739		ECEA1HK010	E.CAPACITOR 50V 1U	1	
C740		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C741		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C742		ECUM1H030CCN	C.CAPACITOR CH 50V 3P	1	
C743		ECUM1H270RSN	C.CAPACITOR CH 50V 27P	1	
C744		ECEA1HKR47	E.CAPACITOR 50V 0.47U	1	
C745		ECUM1H680JFN	C.CAPACITOR CH 50V 68P	1	
C746		ECUM1H150JCN	C.CAPACITOR CH 50V 15P	1	
C748		ECEA1CK470	E.CAPACITOR 16V 47U	1	
C782		ECUM1H180JCN	C.CAPACITOR CH 50V 18P	1	
C790		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C797,98		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	2	
C801		ECUM1H681JCN	C.CAPACITOR 50V 680P	1	
C802		ECUM1H471JCN	C.CAPACITOR CH 50V 470P	1	
C803		ECEA0JKA221	E.CAPACITOR 6.3V 220U	1	
C804		ECUM1H820JCN	C.CAPACITOR CH 50V 82P	1	
C805,06		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	2	
C808		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C809		ECEA1HKA4R7	E.CAPACITOR 50V 4.7U	1	
C810		ECEA0JKA221	E.CAPACITOR 6.3V 220U	1	
C811-13		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	3	
C814		ECEA0JKA101	E.CAPACITOR 6.3V 100U	1	
C815		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C816		ECUM1H470JCN	C.CAPACITOR CH 50V 47P	1	
C817		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C818		ECEA1HKA0R1	E.CAPACITOR 50V 0.1U	1	
C819		ECQB1H332JZ	F.CAPACITOR 50V 3300P	1	
C820		ECUM1H331JCN	C.CAPACITOR CH 50V 330P	1	
C821-23		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	3	
C824		ECUM1H470JCN	C.CAPACITOR CH 50V 47P	1	
C825-27		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	3	
C828,29		ECUM1H560JCN	C.CAPACITOR CH 50V 56P	2	
C830		ECUM1H471JCN	C.CAPACITOR CH 50V 470P	1	
C831		ECUM1H270JCN	C.CAPACITOR CH 50V 27P	1	
C832		ECQV1H154JM	P.CAPACITOR 50V 0.15U	1	
C833		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C834		ECUM1H151JCN	C.CAPACITOR CH 50V 150P	1	
C835		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C836		ECUM1H560JCN	C.CAPACITOR CH 50V 56P	1	
C1002		ECEA1CKA101	E.CAPACITOR 16V 100U	1	
C1003		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C2001		ECEA1CKA470	E.CAPACITOR 16V 47U	1	
C2003		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C2005		ECEA1CKA470	E.CAPACITOR 16V 47U	1	
C2006		ECEA1HKAR47	E.CAPACITOR 50V 0.47U	1	
C2007		ECQV1H683JM	P.CAPACITOR 50V 0.068U	1	
C2009		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C2010		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C2501-04		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	4	
C2505		ECEA1CKA470	E.CAPACITOR 16V 47U	1	
C2506		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C2507		ECQV1H683JM	P.CAPACITOR 50V 0.068U	1	
C2508-10		ECEA1HKA2R2	E.CAPACITOR 50V 2.2U	3	
C2511-14		VCUV1H333KBN	CAPACITOR	4	
C2515		ECEA1HKA010	E.CAPACITOR 50V 1U	1	
C2516		ECEA1HKAR22	E.CAPACITOR 50V 0.22U	1	
C2517		ECA0JM221	E.CAPACITOR 6.3V 220U	1	
C2518		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C2519,20		VCUV1H333KBN	CAPACITOR	2	
C2521		ECEA1CKA470	E.CAPACITOR 16V 47U	1	
C2522		ECEA1HKNR47	E.CAPACITOR 50V 0.47U	1	
C2523		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C2524,25		ECUM1C1052FN	C.CAPACITOR CH 16V 1U	2	
C2526		ECA0JM221	E.CAPACITOR 6.3V 220U	1	
C2527		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C2528		ECEA1HKNR47	E.CAPACITOR 50V 0.47U	1	
C2529		ECEA1CKA101	E.CAPACITOR 16V 100U	1	
C2530		ECEA1HKN010	E.CAPACITOR 50V 1U	1	
C2531		ECUM1E2242FN	C.CAPACITOR 25V 0.22U	1	
C2532		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C2533		ECEA0JKA330	E.CAPACITOR 6.3V 33U	1	
C2534,35		ERJ6GM20R00	M.RESISTOR 1/10W 0	2	
C3001		ECUM1H471JCN	C.CAPACITOR CH 50V 470P	1	
C3002		ECUM1H470JCN	C.CAPACITOR CH 50V 47P	1	
C3003-06		ECEA1HKA010	E.CAPACITOR 50V 1U	4	
C3007,08		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	2	
C3009		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C3010		ECA1AM331	E.CAPACITOR 10V 330U	1	
C3011		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C3012		ECA1AM331	E.CAPACITOR 10V 330U	1	
C3013		ECA0JM331	E.CAPACITOR 6.3V 330U	1	
C3014		ECEA1HKA010	E.CAPACITOR 50V 1U	1	
C3015		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C3016		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3017-19		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	3	
C3022		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C3023,24		ECEA1AKA330	E.CAPACITOR 6.3V 33U	2	
C3027,28		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	2	
C3029		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C3030		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C3031		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C3032		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C3033		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C3301		ECUM1H100DCN	C.CAPACITOR CH 50V 10P	1	
C3302		ECUM1H820JCN	C.CAPACITOR CH 50V 82P	1	
C3304-08		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	5	
C3309		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C3310		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C3312-14		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	3	
C3321		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C3322		ECUM1H180JCN	C.CAPACITOR CH 50V 18P	1	
C3323		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C3324		ECUM1H150JCN	C.CAPACITOR CH 50V 15P	1	
C3325		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C3326		ECUM1H150JCN	C.CAPACITOR CH 50V 15P	1	
C3327,28		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	2	
C3329		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C3330		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C3336		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C3337		ECUM1H060DCN	C.CAPACITOR CH 50V 6P	1	
C3338		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3339		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C3340		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C3341		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3342		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C3343		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C3344		ECUM1H560JCN	C.CAPACITOR CH 50V 56P	1	
C3345		ECUM1H391JCN	C.CAPACITOR CH 50V 390P	1	
C3346		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C3347		ECUM1H560JCN	C.CAPACITOR CH 50V 56P	1	
C3351,52		ECUM1H181JCN	C.CAPACITOR CH 50V 180P	2	
C3353		ECUM1H180JCN	C.CAPACITOR CH 50V 18P	1	
C3354		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C3372		ECEA1HKA3R3	E.CAPACITOR 50V 3.3U	1	
C3401		ECUM1H470JCN	C.CAPACITOR CH 50V 47P	1	
C3402		ECUM1H080DCN	C.CAPACITOR CH 50V 8P	1	
C3403-07		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	5	
C3408,09		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	2	
C3421		ECUM1H472KBN	C.CAPACITOR CH 50V 4700P	1	
C3422		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C3423		ECUM1H050CCN	C.CAPACITOR CH 50V 5P	1	
C3424		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C3425		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C3426		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C3427		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C3428		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C3429		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C3430		ECEA0JKA330	E.CAPACITOR 6.3V 33U	1	
C3431		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C3443		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C3444		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C3445		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C3447		ECUM1H121JCN	C.CAPACITOR CH 50V 120P	1	
C3448		ECUM1H151JCN	C.CAPACITOR CH 50V 150P	1	
C3449		ECUM1H180JCN	C.CAPACITOR CH 50V 18P	1	
C3450,51		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	2	
C3452		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C3472		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C3473		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C3474		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C3475-77		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	3	
C3501		ECA0JM471	E.CAPACITOR 6.3V 470U	1	
C3502		ECRHA030E54R	V.CAPACITOR	1	
C3503		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C3504		ECQB1H223JF	P.CAPACITOR 50V 0.022U	1	
C3505		ECEA1HKN010	E.CAPACITOR 50V 1U	1	
C3506		ECQB1H682JZ	F.CAPACITOR 50V 6800P	1	
C3507		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C3508		ECEA1HKA3R3	E.CAPACITOR 50V 3.3U	1	
C3509		ECUM1H122KBN	C.CAPACITOR CH 50V 1200P	1	
C3510		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C3511		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C3512		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C3513		ECUM1H080DCN	C.CAPACITOR CH 50V 8P	1	
C3514,15		ECEA1CKA100	E.CAPACITOR 16V 10U	2	
C3516,17		ECUM1H180JCN	C.CAPACITOR CH 50V 18P	2	
C3518		ECEA1HKAR47	E.CAPACITOR 50V 0.47U	1	
C3519		ECUM1H221JCN	C.CAPACITOP CH 50V 220P	1	
C3520		ECEA1CKA330	E.CAPACITOR 16V 33U	1	
C3521		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C3522		ECEA1CKA330	E.CAPACITOR 16V 33U	1	
C3523		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C3524		ECEA1HKA010	E.CAPACITOR 50V 1U	1	
C3525-27		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	3	
C3528		ECEA1HKA010	E.CAPACITOR 50V 1U	1	
C3529		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C3530		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C3531		ECUM1H150JCN	C.CAPACITOR CH 50V 15P	1	
C3532		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C3533		ECEA0JKA221	E.CAPACITOR 6.3V 220U	1	
C3534		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C3601		ECUM1H100DCN	C.CAPACITOR CH 50V 10P	1	
C3602		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C3603		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C3604		ECUM1H180JCN	C.CAPACITOR CH 50V 18P	1	
C3605		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C3606		ECUM1H681JCN	C.CAPACITOR 50V 680P	1	
C3607		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C3608		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C3609		ECUM1H271JCN	C.CAPACITOR CH 50V 270P	1	
C3610		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C3611,12		ECUM1H100DCN	C.CAPACITOR CH 50V 10P	2	
C3613		ECUM1H181JCN	C.CAPACITOR CH 50V 180P	1	
C3614		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C3901-05		ECEA1CKA100	E.CAPACITOR 16V 10U	5	
C3906		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C3907		ECEA1CKA470	E.CAPACITOR 16V 47U	1	
C3908		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C3909,10		ECA1AM471	E.CAPACITOR 10V 470U	2	
C3911		ECUM1H332KBN	C.CAPACITOR CH 50V 3300P	1	
C3912		ECEA0JKA101	E.CAPACITOR 6.3V 100U	1	
C3913		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C3914		ECEA1EK3R3	E.CAPACITOR 25V 3.3U	1	
C3915		ECEA1CKN100	E.CAPACITOR 16V 10U	1	
C3916		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C3917		ECEA1CKN100	E.CAPACITOR 16V 10U	1	
C3918		ECEA1CKA470	E.CAPACITOR 16V 47U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C3919		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C3922		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C3923		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C3924		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C3927		ECEA1CKA470	E.CAPACITOR 16V 47U	1	
C4001,02		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	2	
C4003.04		ECEA1CKA100	E.CAPACITOR 16V 10U	2	
C4005		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C4006		ECUM1C2242FN	C.CAPACITOR CH 16V 0.22U	1	
C4007		ECEA1CPZ101	E.CAPACITOR 16V 100U	1	
C4008		ECUM1C2242FN	C.CAPACITOR CH 16V 0.22U	1	
C4009		ECEA1CPZ101	E.CAPACITOR 16V 100U	1	
C4010		ECUM1H222KBN	C.CAPACITOR CH 50V 2200P	1	
C4011,12		ECUM1H122KBN	C.CAPACITOR CH 50V 1200P	2	
C4501		ECQB1H152JH	P.CAPACITOR 50V 1500P	1	
C4502		ECUM1C1042FN	C.CAPACITOR CH 16V 0.1U	1	
C4503		ECUX1H152KBV	C.CAPACITOR CH 50V 1500P	1	
C4504,05		ECEA1CPZ470	E.CAPACITOR 16V 47U	2	
C4506		VCEA1CAH100	E.CAPACITOR 16V 10U	1	
C4507		ECQB1H223JA	P.CAPACITOR 50V 0.022U	1	
C4508		ECEA1EBZ4R7	E.CAPACITOR 25V 4.7U	1	
C4509		ECEA1AP2470	E.CAPACITOR 10V 47U	1	
C4510		ECQB1H103JA	P.CAPACITOR 50V 0.01U	1	
C4511		ECQB1H332JA	P.CAPACITOR 50V 3300P	1	
C4512		ECUX1H561JV	C.CAPACITOR CH 50V 560P	1	
C4513		ECUM1H681JN	C.CAPACITOR CH 50V 680P	1	
C4514		ECUM1H561JN	C.CAPACITOR CH 50V 560P	1	
C4515		VCEA1EAH4R7	E.CAPACITOR 25V 4.7U	1	
C4517		ECEA1AP2101	E.CAPACITOR 10V 100U	1	
C4518		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C4521		ECUM1C473KBV	C.CAPACITOR CH 16V 0.047U	1	
C4522		VCEA1HAH3R3	E.CAPACITOR 50V 3.3U	1	
C4528		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C4530		ECEA0JPK470	E.CAPACITOR 6.3V 47U	1	
C4533		ECEA1CP2330	E.CAPACITOR 16V 33U	1	
C4537		ECUM1H102JCN	C.CAPACITOR CH 50V 1000P	1	
C4538		ECEA1HUR47	E.CAPACITOR 50V 0.47U	1	
C4539		ECUM1C2242FN	C.CAPACITOR CH 16V 0.22U	1	
C4541		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C4545		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C4552		ECUM1C1042FN	C.CAPACITOR CH 16V 0.1U	1	
C4556		VCEA1CAH100	E.CAPACITOR 16V 10U	1	
C4557		ECQB1H223JA	P.CAPACITOR 50V 0.022U	1	
C4558		ECEA1EB24R7	E.CAPACITOR 25V 4.7U	1	
C4559		ECEA1AP2470	E.CAPACITOR 10V 47U	1	
C4560		ECQB1H103JA	P.CAPACITOR 50V 0.01U	1	
C4561		ECQB1H332JA	P.CAPACITOR 50V 3300P	1	
C4562		ECUM1H561JN	C.CAPACITOR CH 50V 560P	1	
C4563		ECUM1H681JN	C.CAPACITOR CH 50V 680P	1	
C4564		ECUM1H561JN	C.CAPACITOR CH 50V 560P	1	
C4565		VCEA1EAH4R7	E.CAPACITOR 25V 4.7U	1	
C4567		ECEA1APZ101	E.CAPACITOR 10V 100U	1	
C4568		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C4572		VCEA1HAH3R3	E.CAPACITOR 50V 3.3U	1	
C4576		ECUM1E473KBN	C.CAPACITOR CH 25V 0.047U	1	
C4583		ECEA1CPZ330	E.CAPACITOR 16V 33U	1	
C4585,86		ECEA1AP2101	E.CAPACITOR 10V 100U	2	
C4591		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C4592		ECUX1H152KBV	C.CAPACITOR CH 50V 1500P	1	
C4604		ECUM1H182JN	C.CAPACITOR CH 50V 1800P	1	
C4606		VCEA0JAC470	E.CAPACITOR 6.3V 47U	1	
C4611		ECQB1H182JZ	F.CAPACITOR 50V 1800P	1	
C4613		ECUM1H821JCN	C.CAPACITOR CH 50V 820P	1	
C4616		ECUX1H102ZFV	C.CAPACITOR CH 50V 1000P	1	
C4617		ECEA10M22	E.CAPACITOR 10V 22U	1	
C4618		ECQB1H822JH	P.CAPACITOR 50V 8200P	1	
C4619		ECEA1APB100	E.CAPACITOR 10V 10U	1	
C4621		ECEA0JPK101	E.CAPACITOR 6.3V 100U	1	
C4629		ECQB1H562J2	P.CAPACITOR 50V 5600P	1	
C4636		ECUM1H471JN	C.CAPACITOR CH 50V 470P	1	
C4638		ECQB1H822JH	P.CAPACITOR 50V 8200P	1	
C4651		ECQB1H333JA	P.CAPACITOR 50V 0.033U	1	
C4652,53		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	2	
C4701		ECCD2H181J	C.CAPACITOR 500V 180P	1	
C4702		ECQP1222JZ	P.CAPACITOR 2200P	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C4703		ECQB1H102JF	P.CAPACITOR 50V 1000P	1	
C4704		ECQB1H103JF	P.CAPACITOR 50V 0.01U	1	
C4705		ECEA16M33	E.CAPACITOR 16V 33U	1	
C4706		ECQV1H104JM	P.CAPACITOR 50V 0.1U	1	
C4707		ECQB1H223JF	P.CAPACITOR 50V 0.022U	1	
C4708		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C4709		ECQB1H472JF	P.CAPACITOR 50V 4700P	1	
C4710		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C4711,12		ECEA1AKA220	E.CAPACITOR 10V 22U	2	
C4713		ECEA1HKA3R3	E.CAPACITOR 50V 3.3U	1	
C4714		ECEA1CKA101	E.CAPACITOR 16V 100U	1	
C4901,02		ECQB1H103JZ	F.CAPACITOR 50V 0.01U	2	
C4903,04		ECQB1H332JZ	F.CAPACITOR 50V 3300P	2	
C4905,06		VCEA1CAD100	CAPACITOR	2	
C4907,08		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	2	
C4909,10		ECQB1H103JZ	F.CAPACITOR 50V 0.01U	2	
C4911,12		ECQB1H332JZ	F.CAPACITOR 50V 3300P	2	
C4913,14		VCEA1CAD100	CAPACITOR	2	
C4915,16		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	2	
C4917,18		ECQB1H103JZ	F.CAPACITOR 50V 0.01U	2	
C4919,20		ECQB1H332JZ	F.CAPACITOR 50V 3300P	2	
C4923,24		VCEA0JAC101	E.CAPASITOR 6.3V 100U	2	
C6001		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C6002		ECEA0JKA330	E.CAPACITOR 6.3V 33U	1	
C6003		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C6004		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C6005		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C6006		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C6007,08		ECUM1H180JCN	C.CAPACITOR CH 50V 18P	2	
C6010		ECUM1H223KBN	C.CAPACITOR CH 50V 0.022U	1	
C6011		ECUM1H472KBN	C.CAPACITOR CH 50V 4700P	1	
C6012		ECUM1H392KBN	C.CAPACITOR CH 50V 3900P	1	
C6013		ECEA0JKA221	E.CAPACITOR 6.3V 220U	1	
C6014		ECQB1H103JF	P.CAPACITOR 50V 0.01U	1	
C6015		ECEA1HKA3R3	E.CAPACITOR 50V 3.3U	1	
C6016,17		ECEA1HKN3R3	E.CAPACITOR 50V 3.3U	2	
C6018		ECEA0JKA221	E.CAPACITOR 6.3V 220U	1	
C6019		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C6020		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C6021		ECEA16M10	E.CAPACITOR 16V	1	
C6022		ECUM1H222KBN	C.CAPACITOR CH 50V 2200P	1	
C6023		ECEA1HKA3R3	E.CAPACITOR 50V 3.3U	1	
C6024		ECEA1HKA4R7	E.CAPACITOR 50V 4.7U	1	
C6025		ECUM1H392KBN	C.CAPACITOR CH 50V 3900P	1	
C6026		ECUM1H223KBN	C.CAPACITOR CH 50V 0.022U	1	
C6027		ECUM1E104KBN	C.CAPACITOR CH 25V 0.01U	1	
C6028		ECUM1H222KBN	C.CAPACITOR CH 50V 2200P	1	
C6029		ECEA0JKA221	E.CAPACITOR 6.3V 220U	1	
C6030		EECS5R5T224N	E.CAPACITOR 5.5V 0.22U	1	
C6034		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C6035		ECEA1CKA330	E.CAPACITOR 16V 33U	1	
C6036		ECEA0JKA330	E.CAPACITOR 6.3V 33U	1	
C6037		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C6038		ECEA1AKA470	E.CAPACITOR 10V 47U	1	
C6040		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C6041		ECEA0JKA101	E.CAPACITOR 6.3V 100U	1	
C6042		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C6043		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C6045		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C6046		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C6049		ECUM1H271JCN	C.CAPACITOR CH 50V 270P	1	
C6050,51		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	2	
C6053-56		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	4	
C6062		ECUM1H271JCN	C.CAPACITOR CH 50V 270P	1	
C6063		ECUM1H222KBN	C.CAPACITOR CH 50V 2200P	1	
C7302		ECEA1CKN100	E.CAPACITOR 16V 10U	1	
C7303		ECQV1H393JZ	P.CAPACITOR 50V 0.039U	1	
C7304		ECEA1CKN100	E.CAPACITOR 16V 10U	1	
C7305		ECQV1H473JZ	P.CAPACITOR 50V 0.047U	1	
C7306		ECQB1H102KZ	P.CAPACITOR 50V 1000P	1	
C7307		ECQB1H822KZ	P.CAPACITOR 50V 8200P	1	
C7308		ECQB1H102KZ	P.CAPACITOR 50V 1000P	1	
C7309		ECQB1H152JH	P.CAPACITOR 50V 1500P	1	
C7310		ECEA16M10	E.CAPACITOR 16V	1	
C7311		ECEA50MR47	E.CAPACITOR 50V 0.47U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C7312		ECQV1H224JM	P.CAPACITOR 50V 0.22U	1	
C7313		ECQV1H104JM	P.CAPACITOR 50V 0.1U	1	
C7314		ECQV1H224JM	P.CAPACITOR 50V 0.22U	1	
C7315		ECQV1H104JM	P.CAPACITOR 50V 0.1U	1	
C7316		ECQV1H224JM	P.CAPACITOR 50V 0.22U	1	
C7317		ECEA1CK101	E.CAPACITOR 16V 100U	1	
C7318		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C7319		ECEA1CK470	E.CAPACITOR 16V 47U	1	
C7320,21		ECEA1CK100	E.CAPACITOR 16V 10U	2	
C7323,24		ECQV1H393JZ	P.CAPACITOR 50V 0.039U	2	
C7331		ECQV1H474JM	P.CAPACITOR 50V 0.47U	1	
C7332,33		ECUM1H102ZFN	C.CAPACITOR CH 50V 1000P	2	
C7334		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C7335		ECEA1CK470	E.CAPACITOR 16V 47U	1	
C7336		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C7337		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C7339		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C7340		ECUM1H390JPN	C.CAPACITOR CH 50V 39P	1	
C7341		ECUM1H070DCN	C.CAPACITOR CH 50V 7P	1	
C7342		ECQV1H823JM	P.CAPACITOR 50V 0.082U	1	
C7343		ECEA1CK100	E.CAPACITOR 16V 10U	1	
C7345		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C7346		ECUM1H390JPN	C.CAPACITOR CH 50V 39P	1	
C7347		ECUM1H070DCN	C.CAPACITOR CH 50V 7P	1	
C7348		ECQV1H393JZ	P.CAPACITOR 50V 0.039U	1	
C7349,50		ECUM1H221JCN	C.CAPACITOR CH 50V 220P	2	
C7351,52		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C7353		ECEA1CK470	E.CAPACITOR 16V 47U	1	
C7401		ECA1CM471	E.CAPACITOR 16V 470U	1	
C7402,03		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C7404		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C7405,06		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C7407,08		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C7409		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C7410		ECEA0JKA101	E.CAPACITOR 6.3V 100U	1	
C7651		ECEA1HKR47	E.CAPACITOR 50V 0.47U	1	
C7652		ECUM1H122KBN	C.CAPACITOR CH 50V 1200P	1	
C7653		ECUM1H153KBN	C.CAPACITOR CH 50V 0.015U	1	
C7654		ECEA1HK010	E.CAPACITOR 50V 1U	1	
C7655		ECQV1H683JM	P.CAPACITOR 50V 0.068U	1	
C7668		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C7685		ECEA1HK010	E.CAPACITOR 50V 1U	1	
C7801		ECQB1H102JH	P.CAPACITOR 50V 1000P	1	
C7802		ECQB1H471JZ	P.CAPACITOR 50V 470P	1	
C7803		ECQB1H472JH	P.CAPACITOR 50V 4700P	1	
C7804		ECQV1H104JM	P.CAPACITOR 50V 0.1U	1	
C7805		ECQB1H472JH	P.CAPACITOR 50V 4700P	1	
C7806		ECQB1H223JH	P.CAPACITOR 50V 0.022U	1	
C7815		VCYE1C104MR1	S.CAPACITOR 16V 0.1U	1	
C7816		ECEA0JKA331	E.CAPACITOR 6.3V 330U	1	
C7851		ECQV1H104JM	P.CAPACITOR 50V 0.1U	1	
C7852		ECEA1CK101	E.CAPACITOR 16V 100U	1	
C7853,54		ECCF1H330JC	C.CAPACITOR 50V 33P	2	
C7855,56		ECEA1HK010	E.CAPACITOR 50V 1U	2	
D301		1SS283	DIODE	1	
D303		MA151WK	DIODE	1	
D305		1SS254	DIODE	1	
D306		MA723VT	DIODE	1	
D307		1SS254	DIODE	1	
D308,09		MA151WK	DIODE	2	
D710		MA3100L	DIODE	1	
D801-07		1SS254	DIODE	7	
D808		MA151WK	DIODE	1	
D1002		1SS254	DIODE	1	
D2001-05		1SS254	DIODE	5	
D2501-08		1SS254	DIODE	8	
D2510		1SS254	DIODE	1	
D3002		MA28W-A	DIODE	1	
D3003		1SS254	DIODE	1	
D3301		1SS254	DIODE	1	
D3302		MA151K	DIODE	1	
D3304		MA151K	DIODE	1	
D3403		MA723VT	DIODE	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
D3405		MA151WA	DIODE	1	
D3408		1SS254	DIODE	1	
D3501		1SS254	DIODE	1	
D3502		MA153	DIODE	1	
D3504		MA151WK	DIODE	1	
D3901		1SS254	DIODE	1	
D3902		MA4130L	DIODE	1	
D3903		1SS254	DIODE	1	
D3904		MA151WK	DIODE	1	
D3906		MA151WA	DIODE	1	
D3908,09		1SS254	DIODE	2	
D4003		MA723VT	DIODE	1	
D4004		1SS254	DIODE	1	
D4501,02		MA151H	DIODE	2	
D4503		MA151K	DIODE	1	
D4504		MA151H	DIODE	1	
D4601,02		MA151K	DIODE	2	
D4701-03		1SS254	DIODE	3	
D6001		1SS254	DIODE	1	
D6002		MA723VT	DIODE	1	
D6003		1SS254	DIODE	1	
D6005		MA151WK	DIODE	1	
D6006		MA151WA	DIODE	1	
D6007		MA151WK	DIODE	1	
D6008		MA151WA	DIODE	1	
D6009		11EQS04	DIODE	1	
D6011,12		11EQS04	DIODE	2	
D6013		MA723VT	DIODE	1	
D6014		1SS254	DIODE	1	
D6015		MA723VT	DIODE	1	
D7303		MA28WA	DIODE	1	
D7304		MA3100L	DIODE	1	
D7401		MA723VT	DIODE	1	
D7672,73		MA3150-H	DIODE	2	
D7851		1SS254	DIODE	1	
DL801		EFDUN124A13N	DELAY LINE	1	
DL802		EFDVR645A45A	DELAY LINE	1	
DL803		VLD0147	DELAY LINE	1	
FL301		ELB4M022	FILTER	1	
FL302		VLF0639	FILTER	1	
FL801		VLF1079	FILTER	1	
FL3001		ELB4H020	FILTER	1	
FL3601		ELB4R031	FILTER	1	
FL3901		VLF0766	FILTER	1	
FL3902		VLF0765	FILTER	1	
FL4501		VLF0947M	FILTER	1	
IC301		VEFH208	IC	1	
IC302		MN3859S	IC	1	
IC303		AN1358S	IC	1	
IC701		M51366SP	IC	1	
IC801		VCR0380	IC	1	
IC802		M52352FP	IC	1	
IC2001		AN3727S	IC	1	
IC2002		UPD4053BG	IC	1	
IC2501		BA6219B	IC	1	
IC2502		LM358PS	IC	1	
IC2503		XRA6439S	IC	1	
IC2504		LM358PS	IC	1	
IC2505		LM393P	IC	1	
IC3001		AN3581S	IC	1	
IC3002		M52055FP	IC	1	
IC3301		M52083FP	IC	1	
IC3401		NJM2233BMA	IC	1	
IC3403		MN155202VZAM	IC	1	
IC3404		MN1280S	IC	1	
IC3405		UPD4066BG	IC	1	
IC3501		LC74760	IC	1	
IC3502		M52055FP	IC	1	
IC3503		NJM2246DA	IC	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
IC3504		NJM2233BMA	IC	1	
IC3601		AN6308S	IC	1	
IC3901		M52475AP	IC	1	
IC3902		AN3916	IC	1	
IC3904		AN1393S	IC	1	
IC4001		NJM4565DD	IC	1	
IC4501		XLH7773KS	IC	1	
IC4601		BA7755AF	IC	1	
IC4701		AN1358S	IC	1	
IC4702		MN4066BS	IC	1	
IC4901		LA7155M	IC	1	
IC4902		MN4066BS	IC	1	
IC6001		MN6755320H2D	IC	1	
IC6002		M38024V1BK	IC	1	
IC6003		MN1280S	IC	1	
IC6005		UPD4052BG	IC	1	
IC6007		M6M80041P	IC	1	
IC6008		TL431CLP	IC	1	
IC7301		TDA3803A	IC	1	
IC7302		TA8721SN	IC	1	
IC7401		M66006FP	IC	1	
IC7651		M52306FP	IC	1	
IC7801		SAA4700	IC	1	
IC7851		MN158413AH1D	IC	1	
J3901,02		VJS1470	21PIN SCART JACK	2	
L302		VLQ0188J180	COIL 18UH	1	
L304		VLQ0188J270	COIL 27UH	1	
L305		VLQ0188J101	COIL 100UH	1	
L306		VLQ0188J390	COIL 39UH	1	
L309-11		VLQ0188J330	COIL 33UH	3	
L312		VLQ0407101K	COIL 100UH	1	
L701		ELESQ680KA	COIL 68UH	1	
L711		ELQTR39XB	COIL	1	
L712		ELQTR22XB	COIL 0.22UH	1	
L714		VLQEL05F2R7K	COIL 2.7UH	1	
L716		ELESQ560KA	COIL 56UH	1	
L717,18		ELESQ680KA	COIL 68UH	2	
L719		ELESQ120KA	COIL 12UH	1	
L801,02		ELESE681KA	COIL 680UH	2	
L803		ELESE331KA	COIL H	1	
L804		VLQ0407101K	COIL 100UH	1	
L806		VLQ0407101K	COIL 100UH	1	
L807,08		VLQ0188J150	COIL 15UH	2	
L809		VLQ0188J330	COIL 33UH	1	
L810		VLQ0188J150	COIL 15UH	1	
L811		VLQ0188J151	COIL 150UH	1	
L812		VLQ0188J270	COIL 27UH	1	
L813,14		VLQ0188J150	COIL 15UH	2	
L2001		VLQ0569	COIL	1	
L2002		VLQ0556	COIL	1	
L2501		VLP0074	COIL	1	
L2502		ELESE330KA	COIL	1	
L2503		ELESE102KA	COIL 1000UH	1	
L3001-03		VLQ0188J330	COIL 33UH	3	
L3004		VLQ0398	COIL	1	
L3005-08		VLQ0556	COIL	4	
L3301		VLQ0188J150	COIL 15UH	1	
L3304		VLQ0188J330	COIL 33UH	1	
L3306		VLQ0188J390	COIL 39UH	1	
L3307		VLQ0188J120	COIL 12UH	1	
L3308		VLQ0188J330	COIL 33UH	1	
L3309		VLQ0188J181	COIL 180UH	1	
L3310		VLQ0188J270	COIL [illegible]	1	
L3313		ELESE681KA	COIL 680UH	1	
L3315,16		VLQ0188J5R6	COIL 5.6UH	2	
L3318		VLQ0188J330	COIL 33UH	1	
L3323		VLQ0188J330	COIL 33UH	1	
L3401		VLQ0188J150	COIL 15UH	1	
L3404		VLQ0188J220	COIL 22UH	1	
L3405		VLQ0188J330	COIL 33UH	1	
L3412		VLQ0188J330	COIL 33UH	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
L3415		VLQ0188J120	COIL 12UH	1	
L3501		VLQ0188J330	COIL 33UH	1	
L3502		VLQ0188J5R6	COIL 5.6UH	1	
L3503		VLQ0188J100	COIL 10UH	1	
L3504		VLQ0188J390	COIL 39UH	1	
L3505		VLQ0188J820	COIL 82UH	1	
L3508		VLQ0188J330	COIL 33UH	1	
L3601		VLQEL05S120K	COIL 12UH	1	
L3602,03		VLQEL05S101K	COIL 100UH	2	
L3604		VLQEL05S151K	COIL H	1	
L3605		VLQEL05S820K	COIL 82UH	1	
L3901-04		ELESE101KA	COIL 100UH	4	
L4001,02		ELESE101KA	COIL 100UH	2	
L4501,02		ELESQ101KA	COIL 100UH	2	
L4601		VLQEL07F153J	COIL 15MH	1	
L4701		ELESE471KA	COIL	1	
L4702		ELESE101KA	COIL 100UH	1	
L4901,02		ELESE102KA	COIL 1000UH	2	
L4903,04		ELESE101KA	COIL 100UH	2	
L4905,06		ELESE102KA	COIL 1000UH	2	
L4907,08		ELESE101KA	COIL 100UH	2	
L4909,10		ELESE102KA	COIL 1000UH	2	
L6001		VLP0083	COIL	1	
L6002		ELESE101KA	COIL 100UH	1	
L6003		VLP0083	COIL	1	
L6007,08		VLP0083	COIL	2	
L6009		ELESE101KA	COIL 100UH	1	
L7301		ELESQ102KA	COIL 1000UH	1	
L7401-03		VLQ0188J330	COIL 33UH	3	
L7404		VLQ0540J330	COIL 33UH	1	
P1001		VJP2593	CONNECTOR (MALE)	1	
P1001		VJS2593	CONNECTOR (FEMALE)	1	
P1002		VJP1142	CONNECTOR (MALE) 3P	1	
P1002		VJS1142	CONNECTOR (FEMALE)	1	
P1102		VJS1932	CONNECTOR (FEMALE)	1	
P1103		VJS1142	CONNECTOR (FEMALE)	1	
P1509		VJS1141	CONNECTOR (FEMALE)	1	
P2001		VJP1232T	CONNECTOR (MALE) 5P	1	
P2001		VJS1738T	CONNECTOR (FEMALE)	1	
P2003		VJP3502	CONNECTOR (MALE)	1	
P2003		VJS3482	CONNECTOR (FEMALE)	1	
P2004		VJS3537A015G	CONNECTOR (FEMALE) 15P	1	
P2902		VJS1738T	CONNECTOR (FEMALE)	1	
P3001		VJS3537A020G	CONNECTOR (FEMALE) 20P	1	
P3002		VJP3233A010	CONNECTOR (MALE) 10P	1	
P3002		VJS3366Z010	CONNECTOR (FEMALE) 10P	1	
P3003		VJF0171	CONNECTOR	1	
P3003		VJP1393T	CONNECTOR (MALE) 13P	1	
P4001		VJS2331	CONNECTOR (FEMALE)	1	
P4002		VJP1238T	CONNECTOR (MALE) 11P	1	
P4002		VJS1744T	CONNECTOR (FEMALE)	1	
P4003		VJP1230T	CONNECTOR (MALE) 3P	1	
P4003		VJS1230	CONNECTOR (FEMALE)	1	
P6001		VJS3537A014G	CONNECTOR (FEMALE) 14P	1	
P6003		VJP1233T	CONNECTOR (MALE) 6P	1	
P6003		VJS1739T	CONNECTOR (FEMALE)	1	
P6004		VJP1235T	CONNECTOR (MALE) 8P	1	
P6004		VJS1741T	CONNECTOR (FEMALE)	1	
P6502		VJS1744T	CONNECTOR (FEMALE)	1	
P7401,02		VJS3537A020G	CONNECTOR (FEMALE) 20P	2	
P7503		VJS3366Z010	CONNECTOR (FEMALE) 10P	1	
P7504		VJS1739T	CONNECTOR (FEMALE)	1	
P9001		VJF0171	CONNECTOR	1	
P9002		VJS1741T	CONNECTOR (FEMALE)	1	
PP2001		VJP3042A012W	CONNECTOR (MALE) 12P	1	
PP2002		VJP3042A010W	CONNECTOR (MALE) 10P	1	
PP3001		VJP3042A009W	CONNECTOR (MALE) 9P	1	
PP3002		VJP3042A012W	CONNECTOR (MALE) 12P	1	
PP3003		VJP3042A013W	CONNECTOR (MALE) 13P	1	
PP3011,12		VJP3042A018W	CONNECTOR (MALE) 18P	2	
PP3013		VJP3042A014W	CONNECTOR (MALE) 14P	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
PP3021-24		VJP3043A012W	CONNECTOR (MALE) 12P	4	
PP3301		VJP3042A011W	CONNECTOR (MALE) 11P	1	
PP4001-03		VJP3186A018	CONNECTOR (MALE) 18P	3	
PP4501		VJP3042A017W	CONNECTOR (MALE) 17P	1	
PP7401-03		VJP3043A005W	CONNECTOR (MALE) 5P	3	
PP7404		VJP3043A006W	CONNECTOR (MALE) 6P	1	
PP7405		VJP3043A004W	CONNECTOR (MALE) 4P	1	
PP7406		VJP3043A010W	CONNECTOR (MALE) 10P	1	
PS1		VJS3043B010W	CONNECTOR (FEMALE) 10P	1	
PS301		VJS3042B009W	CONNECTOR (FEMALE) 9P	1	
PS302		VJS3042B012W	CONNECTOR (FEMALE) 12P	1	
PS303		VJS3042B013W	CONNECTOR (FEMALE) 13P	1	
PS701-03		VJS3043B005W	CONNECTOR (FEMALE) 5P	3	
PS704		VJS3043B006W	CONNECTOR (FEMALE) 6P	1	
PS2001		VJS3042B012W	CONNECTOR (FEMALE) 12P	1	
PS2002		VJS3042B010W	CONNECTOR (FEMALE) 10P	1	
PS3021-24		VJS3043B012W	CONNECTOR (FEMALE) 12P	4	
PS3302,03		VJS3042B018W	CONNECTOR (FEMALE) 18P	2	
PS3501		VJS3042F014W	CONNECTOR (FEMALE) 14P	1	
PS3601		VJS3042B011W	CONNECTOR (FEMALE) 11P	1	
PS4001-03		VJS3186B018	CONNECTOR (FEMALE) 18P	3	
PS4701		VJS3042B017W	CONNECTOR (FEMALE) 17P	1	
PS7301,02		VJR0477	PACK PIN	2	
Q301		MSC2295	TRANSISTOR	1	
Q302		MSB709	TRANSISTOR	1	
Q303,04		MSC2295	TRANSISTOR	2	
Q305		MSD601	TRANSISTOR	1	
Q306		MSC2295	TRANSISTOR	1	
Q307,08		MSB709	TRANSISTOR	2	
Q703		MSD601-S	TRANSISTOR	1	
Q712		2SC1317	TRANSISTOR	1	
Q771		MSD601-S	TRANSISTOR	1	
Q801		2SA1022	TRANSISTOR	1	
Q802		MSC2295	TRANSISTOR	1	
Q803		MSB709	TRANSISTOR	1	
Q1001		2SD1996	TRANSISTOR	1	
Q2001,02		MSB709	TRANSISTOR	2	
Q3001		MSD602	TRANSISTOR	1	
Q3002		2SB1322	TRANSISTOR	1	
Q3003		MSD601	TRANSISTOR	1	
Q3004		MSC2295	TRANSISTOR	1	
Q3005,06		MSD601	TRANSISTOR	2	
Q3301,02		MSC2295	TRANSISTOR	2	
Q3304,05		MSD601	TRANSISTOR	2	
Q3401,02		MSC2295	TRANSISTOR	2	
Q3403		MSD601	TRANSISTOR	1	
Q3404		MSC2295	TRANSISTOR	1	
Q3405-07		MSD601	TRANSISTOR	3	
Q3408		MSD602	TRANSISTOR	1	
Q3409		MSB710	TRANSISTOR	1	
Q3410-12		MSD601	TRANSISTOR	3	
Q3422		MSD1328	TRANSISTOR	1	
Q3423		MSD601	TRANSISTOR	1	
Q3424		MSB710	TRANSISTOR	1	
Q3425		MSC2295	TRANSISTOR	1	
Q3501		MSD601	TRANSISTOR	1	
Q3502		MSB709	TRANSISTOR	1	
Q3601		MSD601	TRANSISTOR	1	
Q3602,03		MSC2295	TRANSISTOR	2	
Q3604		MSB709	TRANSISTOR	1	
Q3901,02		2SD1991A	TRANSISTOR	2	
Q3903		MSD1328	TRANSISTOR	1	
Q3904		MSD601	TRANSISTOR	1	
Q3905		MSC2295	TRANSISTOR	1	
Q3906		MSB709	TRANSISTOR	1	
Q3907		MSD601	TRANSISTOR	1	
Q3912		2SD1996	TRANSISTOR	1	
Q3913-15		MSD601	TRANSISTOR	3	
Q3916		MSB710	TRANSISTOR	1	
Q3917		MSD602	TRANSISTOR	1	
Q3918		MSB710	TRANSISTOR	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
Q4501	2SD655	TRANSISTOR	1	
Q4551	2SB561	TRANSISTOR	1	
Q4601,02	MSD1328	TRANSISTOR	2	
Q4701	2SD602A-R	TRANSISTOR	1	
Q4702,03	MSD601	TRANSISTOR	2	
Q4704,05	MSB710	TRANSISTOR	2	
Q4706	2SB1378	TRANSISTOR	1	
Q4707	2SD601A	TRANSISTOR	1	
Q4708	2SB1378	TRANSISTOR	1	
Q6001	2SD1991A	TRANSISTOR	1	
Q6002	MSB709	TRANSISTOR	1	
Q6003	2SD1915F	TRANSISTOR	1	
Q6004-06	MSD601	TRANSISTOR	3	
Q6008	2SD1991	TRANSISTOR	1	
Q7301	MSD601-S	TRANSISTOR	1	
Q7304,05	MSD601	TRANSISTOR	2	
Q7306	2SC2404-C	TRANSISTOR	1	
Q7307	2SD1328-S	TRANSISTOR	1	
QR301	MRN1402	TRANSISTOR-RESISTOR	1	
QR302	MRN1403	TRANSISTOR-RESISTOR	1	
QR303	MRN1404	TRANSISTOR-RESISTOR	1	
QR304	MRN1402	TRANSISTOR-RESISTOR	1	
QR305	MRN2404	TRANSISTOR-RESISTOR	1	
QR306	XN6213	TRANSISTOR-TRANSISTOR	1	
QR307	MRN1404	TRANSISTOR-RESISTOR	1	
QR308	MRN1407	TRANSISTOR-RESISTOR	1	
QR309	MRN1402	TRANSISTOR-RESISTOR	1	
QR310	MRN1404	TRANSISTOR-RESISTOR	1	
QR311	MRN2404	TRANSISTOR-RESISTOR	1	
QR312	MRN2402	TRANSISTOR-RESISTOR	1	
QR313,14	MRN1404	TRANSISTOR-RESISTOR	2	
QR315	MRN2404	TRANSISTOR-RESISTOR	1	
QR316,17	XN6213	TRANSISTOR-TRANSISTOR	2	
QR318	MRN1402	TRANSISTOR-RESISTOR	1	
QR319,20	MRN1404	TRANSISTOR-RESISTOR	2	
QR701,02	MRN1404	TRANSISTOR-RESISTOR	2	
QR801,02	MRN1404	TRANSISTOR-RESISTOR	2	
QR803	MRN1403	TRANSISTOR-RESISTOR	1	
QR805	MRN1404	TRANSISTOR-RESISTOR	1	
QR806	XN6213	TRANSISTOR-TRANSISTOR	1	
QR1001,02	MRN1402	TRANSISTOR-RESISTOR	2	
QR2001	XN1213	TRANSISTOR-TRANSISTOR	1	
QR2002	MRN2404	TRANSISTOR-RESISTOR	1	
QR2501	XN1211	TRANSISTOR-RESISTOR	1	
QR3001,02	MRN1403	TRANSISTOR-RESISTOR	2	
QR3003	MRN2402	TRANSISTOR-RESISTOR	1	
QR3301-04	DTC363EK	TRANSISTOR-RESISTOR	4	
QR3305	UN211D	TRANSISTOR-RESISTOR	1	
QR3306	DTC363EK	TRANSISTOR-RESISTOR	1	
QR3307,08	MRN1404	TRANSISTOR-RESISTOR	2	
QR3402	MRN2402	TRANSISTOR-RESISTOR	1	
QR3403	MRN1403	TRANSISTOR-RESISTOR	1	
QR3404	XN4212	TRANSISTOR-TRANSISTOR	1	
QR3405	MRN1403	TRANSISTOR-RESISTOR	1	
QR3406-08	XN1212	TRANSISTOR-TRANSISTOR	3	
QR3409,10	MRN1403	TRANSISTOR-RESISTOR	2	
QR3411	MRN1402	TRANSISTOR-RESISTOR	1	
QR3412	MRN1404	TRANSISTOR-RESISTOR	1	
QR3415	XN4212	TRANSISTOR-TRANSISTOR	1	
QR3416	XN1212	TRANSISTOR-TRANSISTOR	1	
QR3417	XN4212	TRANSISTOR-TRANSISTOR	1	
QR3501	MRN1402	TRANSISTOR-RESISTOR	1	
QR3901-03	MRN1404	TRANSISTOR-RESISTOR	3	
QR3904,05	MRN1402	TRANSISTOR-RESISTOR	2	
QR3906	MRN1404	TRANSISTOR-RESISTOR	1	
QR4001	MRN1403	TRANSISTOR-RESISTOR	1	
QR4002,03	DTC363EK	TRANSISTOR-RESISTOR	2	
QR4004,05	MRN1404	TRANSISTOR-RESISTOR	2	
QR4508,09	MRN2404	TRANSISTOR-RESISTOR	2	
QR4510	MRN1403	TRANSISTOR-RESISTOR	1	
QR4602	MRN2402	TRANSISTOR-RESISTOR	1	
QR4603	MRN1404	TRANSISTOR-RESISTOR	1	
QR4701,03	MRN1403	TRANSISTOR-RESISTOR	3	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
QR4704	MRN1404	TRANSISTOR-RESISTOR	1	
QR4901	MRN1404	TRANSISTOR-RESISTOR	1	
QR4902	UN211D	TRANSISTOR-RESISTOR	1	
QR6001	MRN1402	TRANSISTOR-RESISTOR	1	
QR6002,03	MRN2402	TRANSISTOR-RESISTOR	2	
QR6004	MRN1402	TRANSISTOR-RESISTOR	1	
QR6009	XN1213	TRANSISTOR-TRANSISTOR	1	
QR6012	MRN1404	TRANSISTOR-RESISTOR	1	
QR6013	MRN1403	TRANSISTOR-RESISTOR	1	
QR6014	MRN1404	TRANSISTOR-RESISTOR	1	
QR6015	MRN2402	TRANSISTOR-RESISTOR	1	
QR7301,02	MRN1404	TRANSISTOR-RESISTOR	2	
QR7312-14	MRN1402	TRANSISTOR-RESISTOR	3	
QR7315,16	MRN1404	TRANSISTOR-RESISTOR	2	
QR7401	MRN2403	TRANSISTOR-RESISTOR	1	
QR7851	UN6211	TRANSISTOR-RESISTOR	1	
QR7852	UN6213	TRANSISTOR-RESISTOR	1	
R301	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R303	ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R304	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R305	ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R306	ERJ6GM20R00	M.RESISTOR 1/10W 0	1	
R307	ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R308	ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	1	
R309	ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R310	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R311	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R312	ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R313	ERJ6GMYJ361	M.RESISTOR CH 1/10W 360	1	
R314	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R315	ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R316	ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R317	ERJ6GMYJ561	M.RESISTOR CH 1/10W 560	1	
R318	ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R319	ERJ6GMYJ561	M.RESISTOR CH 1/10W 560	1	
R320	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R321	ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R322	ERJ6GMYJ563	M.RESISTOR CH 1/10W 56K	1	
R323	ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R324	ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R325	ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	1	
R326	ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R327	ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R328	ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R329	ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R330	ERJ6GMYG432	M.RESISTOR CH 1/10W 4.3K	1	
R331	ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R332	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R333	ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R334	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R335	ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	1	
R336	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R337	ERJ6GMYJ391	M.RESISTOR CH 1/10W 390	1	
R338,39	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R340	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R341	ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R342	ERJ6GMYJ181	M.RESISTOR CH 1/10W 180	1	
R343	ERJ6GMYJ273	M.RESISTOR CH 1/10W 27K	1	
R344	ERJ6GMYJ911	M.RESISTOR CH 1/10W 910	1	
R345	ERJ6GMYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R346	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R347	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R348	ERJ6GMYJ273	M.RESISTOR CH 1/10W 27K	1	
R349	ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R350	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R351	ERJ6GMYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R352	ERJ6GMYG183	M.RESISTOR CH 1/10W 18K	1	
R353	ERJ6GMYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R354	ERJ6GMYG753	M.RESISTOR CH 1/10W 75K	1	
R355	ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R356	ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R357	ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R358	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R359		ERJ6GMZ0R00	M.RESISTOR 1/10W 0	1	
R360,61		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R716		ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R717		ERJ6GEYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R718		ERJ6GEYJ754	M.RESISTOR CH 1/10W 750K	1	
R719		ERJ6GEYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R720		ERJ6GEYJ622	M.RESISTOR CH 1/10W 6.2K	1	
R721		ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R723		ERJ6GEYJ183	M.RESISTOR CH 1/10W 18K	1	
R724		ERDS2TJ101	C.RESISTOR 1/4W 100	1	
R725		ERJ6GEYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R726		ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R727		ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R728		ERDS2TJ471	C.RESISTOR 1/4W 470	1	
R731		ERJ6GEYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R732		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R737		ERJ6GEYJ274	M.RESISTOR CH 1/10W 270K	1	
R738		ERJ6GEYJ334	M.RESISTOR CH 1/10W 330K	1	
R740		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R741		ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R743		ERJ6GEYJ470	M.RESISTOR CH 1/10W 47	1	
R744		ERJ6GEYJ821	M.RESISTOR CH 1/10W 820	1	
R745		ERJ6GEYJ331	M.RESISTOR CH 1/10W 330	1	
R746		ERDS2TJ181	C.RESISTOR 1/4W 180	1	
R747		ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R750		ERJ6GEYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R759		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R772		ERJ6GEYJ271	M.RESISTOR CH 1/10W 270	1	
R773		ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R774		ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R792		ERDS2TJ120	C.RESISTOR 1/4W 12	1	
R801		ERJ6GMYJ561	M.RESISTOR CH 1/10W 560	1	
R802		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R803		ERJ6GMYG242	M.RESISTOR CH 1/10W 2.4K	1	
R804,05		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R809		ERJ6GMYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R810,11		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R814		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R815		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R816		ERJ6GMZ0R00	M.RESISTOR 1/10W 0	1	
R817		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R818		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R820		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R821,22		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R824		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R825		ERJ6GMYJ271	M.RESISTOR CH 1/10W 270	1	
R826		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R827		ERJ6GMYJ154	M.RESISTOR CH 1/10W 150K	1	
R828		ERJ6GMYJ204	M.RESISTOR CH 1/10W 200K	1	
R829		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R830		ERJ6GMYJ154	M.RESISTOR CH 1/10W 150K	1	
R831		ERJ6GMYJ153	M.RESISTOR CH 1/10W 15K	1	
R832		ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R833		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R834		ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R835,36		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	2	
R837		ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R838,39		ERJ6GMYJ681	M.RESISTOR CH 1/10W 680	2	
R840		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R841		ERJ6GMYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R842,43		ERJ6GMYJ271	M.RESISTOR CH 1/10W 270	2	
R844		ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R845		ERJ6GMYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R846		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R847		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R848		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R849		ERJ6GMYK395	M.RESISTOR CH 1/10W 3.9M	1	
R850		ERJ6GMYJ302	M.RESISTOR CH 1/10W 3K	1	
R851		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R1001		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R1002		ERDS1TJ822	C.RESISTOR 1/2W 8.2K	1	
R2004		ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	1	
R2005		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R2011		ERJ6GMYG222	M.RESISTOR CH 1/10W 2.2K	1	
R2012		ERJ6GMYG392	M.RESISTOR CH 1/10W 3.9K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R2013,14		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	2	
R2015		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R2016		ERJ6GMYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R2018		ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	1	
R2019		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R2501		ERX1SJ1R8	M.RESISTOR 1W 1.8	1	
R2502		ERJ6GMYG112	M.REISITOR CH 1/10W 1.1K	1	
R2503		ERJ6GMYG102	M.RESISTOR CH 1/10W 1K	1	
R2504		ERJ6GMYG332	M.RESISTOR CH 1/10W 3.3K	1	
R2505		VRE0034E103	M.RESISTOR CH 1/10W 10K	1	
R2506		ERJ6GMYJ564	M.RESISTOR CH 1/10W 560K	1	
R2507		VRE0034E103	M.RESISTOR CH 1/10W 10K	1	
R2508		VRE0034E512	M.RESISTOR CH 1/10W 5.1K	1	
R2509		VRE0034E472	M.RESISTOR CH 1/10W 4.7K	1	
R2510		ERJ6GMYJ105	M.RESISTOR CH 1/10W 1M	1	
R2511		ERJ6GMYJ684	M.RESISTOR CH 1/10W 680K	1	
R2513		ERJ6GMYG133	M.RESISTOR CH 1/10W 13K	1	
R2514		ERJ6GMYG821	M.RESISTOR CH 1/10W 820	1	
R2515		ERG12SJ561	M.RESISTOR 1/2W 560	1	
R2516		ERJ6GMYG473	M.RESISTOR CH 1/10W 47K	1	
R2517		ERX12SJR47	M.RESISTOR 1/12W 0.47U	1	
R2518		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R2519		ERJ6GMYG432	M.RESISTOR CH 1/10W 4.3K	1	
R2520		ERJ6GMYG103	M.RESISTOR CH 1/10W 10K	1	
R2521-23		ERDS2TJ560	C.RESISTOR 1/4W 56	3	
R2524		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R2525		EROS2CKG6800	M.RESISTOR 1/4W 680	1	
R2526		ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R2527		ERJ6GMYJ105	M.RESISTOR CH 1/10W 1M	1	
R2528		ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R2529		ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R2530		ERJ6GMYJ105	M.RESISTOR CH 1/10W 1M	1	
R2531,32		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	2	
R2533		ERJ6GMYJ393	M.RESISTOR CH 1/10W 39K	1	
R2534		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R2535		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R2536		ERJ6GMYJ824	M.RESISTOR CH 1/10W 820K	1	
R2537		ERJ6GMYJ393	M.RESISTOR CH 1/10W 39K	1	
R2538		ERJ6GMYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R2539		ERJ6GMYJ681	M.RESISTOR CH 1/10W 680	1	
R2540		ERJ6GMYJ105	M.RESISTOR CH 1/10W 1M	1	
R2541		ERJ6GMYJ271	M.RESISTOR CH 1/10W 270	1	
R3001,02		ERJ6GMYJ750	M.RESISTOR CH 1/10W 75	2	
R3003		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R3004		ERJ6GMYJ683	M.RESISTOR CH 1/10W 68K	1	
R3005		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3006,07		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R3008		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R3009		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3010		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R3011		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R3012		ERJ6GMYG911	M.RESISTOR CH 1/10W 910	1	
R3013		ERJ6GMYG102	M.RESISTOR CH 1/10W 1K	1	
R3014		ERJ6GMYG471	M RESISTOR CH 1/10W 470	1	
R3015		ERJ6GMYG102	M.RESISTOR CH 1/10W 1K	1	
R3016		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3017		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R3018		ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R3019		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R3021		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3022		ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	1	
R3023		ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	1	
R3024		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R3025		ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	1	
R3026,27		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	2	
R3301		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R3302		ERJ6GMYJ183	M.RESISTOR CH 1/10W 18K	1	
R3303		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3304		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R3305		ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R3306		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R3307		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3308		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R3310		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R3322		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	

Ref. No.		Part No.	Part Name & Description	Pcs	Remarks
R3323		ERJ6GMYJ561	M.RESISTOR CH 1/10W 560	1	
R3324		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R3325,26		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R3327		ERJ6GMYJ821	M.RESISTOR CH 1/10W 820	1	
R3328		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3333		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3334		ERJ6GMYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R3335		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3336,37		ERJ6GMYJ681	M.RESISTOR CH 1/10W 680	2	
R3338		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3339		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R3340		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3341		ERJ6GMYJ563	M.RESISTOR CH 1/10W 56K	1	
R3342		ERJ6GMYJ391	M.RESISTOR CH 1/10W 390	1	
R3345-47		ERJ6GMYJ821	M.RESISTOR CH 1/10W 820	3	
R3352		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3353		ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R3401		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R3402		ERJ6GMYJ183	M.RESISTOR CH 1/10W 18K	1	
R3403		ERJ6GMYG361	M.RESISTOR CH 1/10W 360	1	
R3404		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R3405		ERJ6GMYG123	M.RESISTOR CH 1/10W 12K	1	
R3406		ERJ6GMYG512	M.RESISTOR CH 1/10W 5.1K	1	
R3407		ERJ6GMYG272	M.RESISTOR CH 1/10W 2.7K	1	
R3408		ERJ6GMYG302	M.RESISTOR CH 1/10W 3K	1	
R3409		ERJ6GMYG821	M.RESISTOR CH 1/10W 820	1	
R3410		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R3411-13		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	3	
R3415		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R3417		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R3422		ERJ6GMYG333	M.RESISTOR CH 1/10W 33K	1	
R3423		ERJ6GMYG683	M.RESISTOR CH 1/10W 68K	1	
R3424		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R3425		ERJ6GMYJ183	M.RESISTOR CH 1/10W 18K	1	
R3426		ERJ6GMYJ391	M.RESISTOR CH 1/10W 390	1	
R3427		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R3428		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R3429		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R3430		ERJ6GMYJ823	M.RESISTOR CH 1/10W 82K	1	
R3431		ERJ6GMYG821	M.RESISTOR CH 1/10W 820	1	
R3433		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R3434		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R3435		ERJ6GMYG302	M.RESISTOR CH 1/10W 3K	1	
R3436		ERJ6GMYG272	M.RESISTOR CH 1/10W 2.7K	1	
R3437		ERJ6GMYG512	M.RESISTOR CH 1/10W 5.1K	1	
R3438		ERJ6GMYG123	M.RESISTOR CH 1/10W 12K	1	
R3441		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R3442		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R3443		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R3444,45		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	2	
R3446,47		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R3463		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R3464		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3465		ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R3466		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3467		ERJ6GMYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R3468,69		ERJ6GMYJ822	M.RESISTOR CH 1/10W 8.2K	2	
R3470		ERJ6GMYG123	M.RESISTOR CH 1/10W 12K	1	
R3471		ERJ6GMYG512	M.RESISTOR CH 1/10W 5.1K	1	
R3472		ERJ6GMYG272	M.RESISTOR CH 1/10W 2.7K	1	
R3473		ERJ6GMYG302	M.RESISTOR CH 1/10W 3K	1	
R3474		ERJ6GMYG821	M.RESISTOR CH 1/10W 820	1	
R3475		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R3501		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3502		ERJ6GMYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R3503		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R3504,05		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	2	
R3506		ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	1	
R3507		ERJ6GMYG103	M.RESISTOR CH 1/10W 10K	1	
R3508		ERJ6GMYG332	M.RESISTOR CH 1/10W 3.3K	1	
R3509-11		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	3	
R3513,14		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	2	
R3515		ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R3516		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R3517		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	

Ref. No.		Part No.	Part Name & Description	Pcs	Remarks
R3518		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R3519		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R3520		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3521		ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R3522		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3523		ERJ6GMYJ122	M.RESISTOR CH 1/10W 1.2K	1	
R3524		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3525		ERJ6GMYJ331	M.RESISTOR CH 1/10W 330	1	
R3526		ERJ6GMYJ470	M.RESISTOR CH 1/10W 47	1	
R3601		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R3602		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3603		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R3604		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3605		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R3606		ERJ6GMYJ821	M.RESISTOR CH 1/10W 820	1	
R3607-12		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	6	
R3613		ERJ6GMYJ561	M.RESISTOR CH 1/10W 560	1	
R3614		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R3615		ERJ6GMYJ681	M.RESISTOR CH 1/10W 680	1	
R3616		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R3901-05		ERJ6GMYJ750	M.RESISTOR CH 1/10W 75	5	
R3906		ERDS1TJ750	C.RESISTOR 1/2W 75	1	
R3908,09		ERJ6GMYJ750	M.RESISTOR CH 1/10W 75	2	
R3910,11		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	2	
R3912,13		ERJ6GMYJ151	M.RESISTOR CH 1/10W 150	2	
R3914		ERJ6GMYJ750	M.RESISTOR CH 1/10W 75	1	
R3915		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R3916,17		ERDS2TJ181	C.RESISTOR 1/4W 180	2	
R3926		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R3927,28		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R3929		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R3930		ERJ6GMYJ112	M.RESISTOR CH 1/10W 1.1K	1	
R3931		ERJ6GMYJ123	M.RESISTOR CH 1/10W 12K	1	
R3932		ERJ6GMYJ183	M.RESISTOR CH 1/10W 18K	1	
R3933		ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	1	
R3934		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R3935		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R3936		ERJ6GMYJ561	M.RESISTOR CH 1/10W 560	1	
R3938		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R3945		ERJ6GMYJ561	M.RESISTOR CH 1/10W 560	1	
R3946		ERJ6GMZ0R00	M.RESISTOR 1/10W 0	1	
R3950,51		ERJ6GMYJ331	M.RESISTOR CH 1/10W 330	2	
R3953		ERDS2TJ562	C.RESISTOR 1/4W 5.6K	1	
R3954		ERJ6GMYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R3955		ERJ6GMYJ123	M.RESISTOR CH 1/10W 12K	1	
R3956		ERJ6GMYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R3957-60		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	4	
R3961		ERJ6GMYJ750	M.RESISTOR CH 1/10W 75	1	
R3962		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R3963		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R3964		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R3965		ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R3966		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R3967		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R3968		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R4001,02		ERDS2TJ680	C.RESISTOR 1/4W 68	2	
R4003-08		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	6	
R4009		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R4010		ERJ6GMYG433	M.RESISTOR CH 1/10W 43K	1	
R4011		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R4012		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R4013		ERJ6GMYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R4014		ERJ6GMYG100	M.RESISTOR CH 1/10W 10	1	
R4015		ERJ6GMYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R4020		ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R4021		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R4022		ERJ6GMYJ273	M.RESISTOR CH 1/10W 27K	1	
R4028		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R4029,30		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R4033		ERJ6GMZ0R00	M.RESISTOR 1/10W 0	1	
R4034		ERJ6GMYG393	M.RESISTOR CH 1/10W 39K	1	
R4035		ERJ6GMZ0R00	M.RESISTOR 1/10W 0	1	
R4036		ERJ6GMYG393	M.RESISTOR CH 1/10W 39K	1	
R4501,02		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	2	
R4503		VKED071E36C	M.RESISTOR	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R4504,05		ERJ6GEYJ393	M.RESISTOR CH 1/10W 39K	2	
R4506,07		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	2	
R4508		ERJ6GEYG224	M.RESISTOR CH 1/10W 220K	1	
R4509		ERJ6GEYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R4510		ERJ6GEYJ621	M.RESISTOR CH 1/10W 620	1	
R4511		ERJ6GEYG303	M.RESISTOR CH 1/10W 30K	1	
R4512		VRE0034E163	M.RESISTOR CH 1/10W 16K	1	
R4513		ERJ3GEYG103	M.RESISTOR CH 1/16W 10K	1	
R4514,15		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	2	
R4518,19		ERJ6GMZ0R00	M.RESISTOR 1/10W 0	2	
R4522		ERJ6GEYJ225	M.RESISTOR CH 1/10W 2.2M	1	
R4527		VRE0034E333	M.RESISTOR CH 1/10W 33K	1	
R4528		VRE0034E153	M.RESISTOR CH 1/10W 15K	1	
R4529		ERJ6GEYG562	M.RESISTOR CH 1/10W 5.6K	1	
R4530		ERJ3GEYJ334	M.RESISTOR CH 1/16W 330K	1	
R4534		ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R4535		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R4539		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R4541		ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R4542		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R4543		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R4551,52		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	2	
R4553		ERJ6GEYJ273	M.RESISTOR CH 1/10W 27K	1	
R4554		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R4558		ERJ6GEYG224	M.RESISTOR CH 1/10W 220K	1	
R4561		ERJ6GEYG303	M.RESISTOR CH 1/10W 30K	1	
R4562		VRE0034E10C	M.RESISTOR	1	
R4563		ERJ3GEYG272	M.RESISTOR CH 1/16W 2.7K	1	
R4568		ERJ6GEYJ273	M.RESISTOR CH 1/10W 27K	1	
R4569		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R4573		ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R4577		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R4578		VRE0034E473	M.RESISTOR CH 1/10W 47K	1	
R4581		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R4583		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R4584		ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R4585		[illegible]J3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R4586		ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R4587,88		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	2	
R4591		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R4592		ERJ6GEYJ563	M.RESISTOR CH 1/10W 56K	1	
R4593		ERJ6GEYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R4594		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R4603		ERJ3GEYG183	M.RESISTOR CH 1/16W 18K	1	
R4606		ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R4610		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R4611		ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	1	
R4612		ERJ6GEYJ331	M.RESISTOR CH 1/10W 330	1	
R4613		ERJ6GEYJ394	M.RESISTOR CH 1/10W 390K	1	
R4615		ERJ6GEYJ133	M.RESISOTR CH 1/10W 13K	1	
R4616		ERJ6GEYJ105	M.RESISTOR CH 1/10W 1M	1	
R4638		ERJ6GMZ0R00	M.RESISTOR 1/10W 0	1	
R4649		ERJ3GEYG470	M.RESISTOR CH 1/16W 47	1	
R4651		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
R4652		ERJ6GEYJ223	M.RESISTOR CH ./10W 22K	1	
R4653		ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	1	
R4654		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	
R4655		ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R4656		ERJ6GEYG243	M.RESISTOR CH 1/10W 24K	1	
R4657		ERJ6GEYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R4666		ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R4701		ERJ6GMYJ153	M.RESISTOR CH 1/10W 15K	1	
R4702		ERJ6GMYJ821	M.RESISTOR CH 1/10W 820	1	
R4703		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R4704,05		ERJ6GMYJ153	M.RESISTOR CH 1/10W 15K	2	
R4706		ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R4707		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R4708		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R4709		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R4710		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R4711		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R4712		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R4713		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R4714		ERJ6GMYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R4715		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R4716		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R4717		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R4718		ERJ6GMYG753	M.RESISTOR CH 1/10W 75K	1	
R4719		ERJ6GMYG203	M.RESISTOR CH 1/10W 20K	1	
R4720,21		ERJ6GMYJ822	M.RESISTOR CH 1/10W 8.2K	2	
R4722		ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	1	
R4723		ERJ6GMYJ183	M.RESISTOR CH 1/10W 18K	1	
R4724,25		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	2	
R4726		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R4901,02		ERJ6GMYJ391	M.RESISTOR CH 1/10W 390	2	
R4903,04		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	2	
R4905,06		ERJ6GMYJ391	M.RESISTOR CH 1/10W 390	2	
R4907,08		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	2	
R4909,10		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	2	
R4915-18		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	4	
R4921		ERJ6GMYG163	M.RESISTOR CH 1/10W 16K	1	
R4922,23		ERJ6GMYG433	M.RESISTOR CH 1/10W 43K	2	
R4924		ERJ6GMYG163	M.RESISTOR CH 1/10W 16K	1	
R4925		ERJ6GMYG473	M.RESISTOR CH 1/10W 47K	1	
R4926		ERJ6GMYG223	M.RESISTOR CH 1/10W 22K	1	
R4927,28		ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	2	
R4929		ERJ6GMYG223	M.RESISTOR CH 1/10W 22K	1	
R4930		ERJ6GMYG473	M.RESISTOR CH 1/10W 47K	1	
R4931		ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	1	
R6001		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6002,03		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	2	
R6004		EROS2CKG2000	M.RESISTOR 1/4W 200	1	
R6005		ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R6006		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6007-09		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	3	
R6010,11		ERJ6GMYG223	M.RESISTOR CH 1/10W 22K	2	
R6012		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6013		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R6015,16		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R6017		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R6018		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6019		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R6020,21		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R6022-24		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	3	
R6025		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R6027		ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	1	
R6028		ERJ6GMZ0R00	M.RESISTOR 1/10W 0	1	
R6029		ERJ6GMYJ183	M.RESISTOR CH 1/10W 18K	1	
R6030		ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	1	
R6031		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R6032,33		ERJ6GMYJ271	M.RESISTOR CH 1/10W 270	2	
R6034		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R6035		ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	1	
R6036		ERJ6GMYJ123	M.RESISTOR CH 1/10W 12K	1	
R6037,38		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R6039,40		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	2	
R6041		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	1	
R6042		ERJ6GMYJ271	M.RESISTOR CH 1/10W 270	1	
R6044-49		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	6	
R6050		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R6051		ERJ6GMYJ271	M.RESISTOR CH 1/10W 270	1	
R6052		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R6053		ERJ6GMYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R6054		ERJ6GMZ0R00	M.RESISTOR 1/10W 0	1	
R6055		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R6056,57		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	2	
R6058,59		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R6060		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R6061,62		ERJ6GMYJ683	M.RESISTOR CH 1/10W 68K	2	
R6063		ERJ6GMYJ22[illegible]	RESISTOR CH 1/10W 220K	1	
R6064		ERJ6GMYJ104	M.RESISTOR CH 1/10W 100K	1	
R6066		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R6067		ERJ6GMYJ181	M.RESISTOR CH 1/10W 180	1	
R6068-70		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	3	
R6071		ERDS2TJ391	C.RESISTOR 1/4W 390	1	
R6074		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R6075		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6076		ERJ6GMYJ563	M.RESISTOR CH 1/10W 56K	1	
R6077		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6078		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R6079		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6081		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R6082		ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R6083-86		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	4	
R6087,88		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	2	
R6089,90		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R6091		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R6092,93		ERJ6GMYJ271	M.RESISTOR CH 1/10W 270	2	
R6094,95		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	2	
R6096		ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R6097,98		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R6099		ERJ6GMYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R6100		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R6101		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6102,03		ERJ6GMYJ272	M.RESISTOR CH 1/10W 2.7K	2	
R6104		ERJ6GMZOROO	M.RESISTOR 1/10W 0	1	
R6106,07		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	2	
R6108		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R6109		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R6110		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6112		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R6113		ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R6114		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6116		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6118		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6120		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6122		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6123		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R6124		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R6125		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R7302		ERJ6GEYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R7303		ERJ6GEYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R7304		ERJ6GEYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R7305		ERJ6GEYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R7306		ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R7307		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R7308		ERJ6GEYJ273	M.RESISTOR CH 1/10W 27K	1	
R7309		ERDS2TJ102	C.RESISTOR 1/4W 1K	1	
R7310		ERJ6GEYJ474	M.RESISTOR CH 1/10W 470K	1	
R7311		ERJ6GEYJ562	M.RESISTOR CH 1/10W 5.6K	1	
R7312		ERJ6GEYJ563	M.RESISTOR CH 1/10W 56K	1	
R7313		ERJ6GEYJ824	M.RESISTOR CH 1/10W 820K	1	
R7314,15		ERJ6GEYJ224	M.RESISTOR CH 1/10W 220K	2	
R7316		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	1	
R7317		ERJ6GEYJ393	M.RESISTOR CH 1/10W 39K	1	
R7318		ERJ6GEYJ153	M.RESISTOR CH 1/10W 15K	1	
R7321		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R7322		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R7323		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R7324,25		ERJ6GEYJ271	M.RESISTOR CH 1/10W 270	2	
R7329		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R7330		ERJ6GEYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R7334-37		ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	4	
R7338		ERJ6GEYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R7339		ERJ6GEYJ330	M.RESISTOR CH 1/10W 33	1	
R7340		ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R7341		ERJ6GEYJ681	M.RESISTOR CH 1/10W 680	1	
R7342		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R7345		ERJ6GEYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R7346		ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	1	
R7347		ERJ6GEYJ681	M.RESISTOR CH 1/10W 680	1	
R7348		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R7349		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R7351-53		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	3	
R7354,55		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	2	
R7403		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R7407,08		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	2	
R7410-12		ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	3	
R7413-19		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	7	
R7420		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R7421-23		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	3	
R7651		ERJ6GEYJ224	M.RESISTOR CH 1/10W 220K	1	
R7652		ERJ6GEYJ331	M.RESISTOR CH 1/10W 330	1	
R7653		ERJ6GEYF124	M.RESISTOR CH 1/10W 120K	1	
R7654		ERJ6GEYJ223	M.RESISTOR CH 1/10W 22K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R7655		ERJ6GEYJ334	M.RESISTOR CH 1/10W 330K	1	
R7676		ERG1SJ152	M.RESISTOR 1W 1.5K	1	
R7801		ERDS2TJ472	C.RESISTOR 1/4W 4.7K	1	
R7802		EROS2CKG7502	M.RESISTOR 1/4W 75K	1	
R7803,04		ERDS2TJ103	C.RESISTOR 1/4W 10K	2	
R7805		ERDS2TJ473	C.RESISTOR 1/4W 47K	1	
R7806		EROS2CKG8201	M.RESISTOR 1/4W 8.2K	1	
R7851		ERDS2TJ103	C.RESISTOR 1/4W 10K	1	
R7852		ERDS2TJ332	C.RESISTOR 1/4W 3.3K	1	
RX3401		EXBF8E102J	RESISTOR-RESISTOR	1	
SW3901		VSS0385	SWITCH	1	
T703		EIV5EC013A	TRANSFORMER	1	
T704		EIV5EC006A1	TRANSFORMER	1	
T4701		VLT0695	TRANSFORMER	1	
T4702		VLT0696	TRANSFORMER	1	
T7301		EIR7QG001B	TRANSFORMER	1	
T7302,03		EIL7QH012Q	TRANSFORMER	2	
T7304		EIS5EC007A	TRANSFORMER	1	
T7305		EIS5EC005A	TRANSFORMER	1	
TR		VJS3481	CONNECTOR (FEMALE)	1	
VR301		EVN49CA00B23	V.RESISTOR 2K	1	
VR302		EVN49CA00B13	V.RESISTOR	1	
VR303		EVNCBAA00B13	V.RESISTOR	1	
VR304		EVN49CA00B13	V.RESISTOR	1	
VR701		EVMEASA00B23	V.RESISTOR	1	
VR801,02		EVMEASA00B13	V.RESISTOR	2	
VR803		EVMEASA00B14	V.RESISTOR	1	
VR804		EVN49CA00B53	V.RESISTOR	1	
VR2001-05		EVNDXAA00B54	V.RESISTOR 50K	5	
VR3001-03		EVNDXAA00B23	V.RESISTOR 5K	3	
VR3301		EVMF6SA00B24	V.RESISTOR 20K	1	
VR3302		EVN49CA00B54	V.RESISTOR	1	
VR3304,05		EVN49CA00B52	V.RESISTOR 500	2	
VR3307		EVN49CA00B54	V.RESISTOR	1	
VR3901		EVMEASA00B24	V.RESISTOR	1	
VR4002		EVNDXAA00B25	V.RESISTOR 200K	1	
VR4501		EVMECSA00B53	V.RESISTOR	1	
VR4502		EVMEASA00BY4	V.RESISTOR	1	
VR4507		EVMEASA00BY4	V.RESISTOR	1	
VR4509		EVMECSA00BY3	V.RESISTOR	1	
VR4512		EVNCBAA00B52	V.RESISTOR	1	
VR4550		EVMECSA00BS3	V.RESISTOR	1	
VR4551,52		EVMEASA00B55	V.RESISTOR	2	
VR7301		EVMEASA00B14	V.RESISTOR	1	
VR7326		EVMEASA00B52	V.RESISTOR	1	
VR7328		EVMEASA00B52	V.RESISTOR	1	
VR7340		EVNCBAA00B14	V.RESISTOR	1	
VR7342		EVNCBAA00B53	V.RESISTOR	1	
VR7344		EVNCBAA00B14	V.RESISTOR	1	
VR7660		EVNCBAA00B15	V.RESISTOR	1	
X710		VLF1060	CRYSTAL OSCILLATOR	1	
X711		VLF0638	CRYSTAL OSCILLATOR	1	
X716		EFCV4045A4	CRYSTAL OSCILLATOR	1	
X720		VLF1061	CRYSTAL OSCILLATOR	1	
X801		VSX0406	CRYSTAL OSCILLATOR	1	
X3302		EFOGC3584A5	CRYSTAL OSCILLATOR	1	
X3501		VSX0574	CRYSTAL OSCILLATOR	1	
X6001		VSX0583	CRYSTAL OSCILLATOR	1	
X6002		FEFOEC7374T4E	CRYSTAL OSCILLATOR	1	
X7001		VSQ0565	CRYSTAL OSCILLATOR	1	
X7301,02		EFCS5R5MS5B	CRYSTAL OSCILLATOR	2	
X7303,04		EFCS5R74MS5B	CRYSTAL OSCILLATOR	2	
X7305		ELB5A016	CRYSTAL OSCILLATOR	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
X7851		EF0A4R0M03C2	CRYSTAL OSCILIATOR	1	
			MISCELLANEOUS		
		VEE9099	EARTH WIRE	1	(TV DEMODU-POWER
					SHIELD CASE)
		VJH0683	RF ANT TERMINAL PLATE	1	
		VEE8682	WIRE CABLE	1	(P1001-P1102)
		VEE8683	WIRE CABLE	1	(P1002-P1103)
		VEE8688	WIRE CABLE	1	(P2001-P2902)
		VEE9001	WIRE CABLE	1	(POWER TR.-P2003)
		VEE8685	WIRE CABLE	1	(P4002-P6502)
		VEE8686	WIRE CABLE	1	(P6003-P7504)
		VEE8837	WIRE CABLE	1	(P3002-P7503)
		VWJ0775	FLAT CARD CABLE	1	(P2004-P1507)
		VWJ0776	FLAT CARD CABLE	1	(P3001-P501)
		VWJ0778	FLAT CARD CABLE	1	(P7401-P7501)
		VWJ0801	FLAT CARD CABLE	1	(P7402-P7502)
		VMA6768	EARTH ANGLE	1	
		VJF1031	CLAMPER	1	
		VEE8687	WIRE CABLE	1	(P4003-P1509)
		VEE8834	WIRE CABLE	1	(P3003-P9001)
		VEE8835	WIRE CABLE	1	(P6004-P9002)
		ENC17984	RF CONVERTER	1	<!>FOR TV DEMODU.
		ENV578D7H6	TUNER	1	<!>FOR TV DEMODU.
		VSC4025	SHIELD COVER (MAIN)	1	FOR TV DEMODULATOR
		VSC3241	SHIELD COVER (TOP)	1	FOR TV DEMODULATOR
		VMX2233	C.B.A. SPACER	1	FOR SUB LUMI.& CHRO.
		VEJ1438	REAR JACK PLATE	1	FOR INPUT/OUTPUT
		XTV3+8GFZ	SCREW	4	FOR INPUT/OUTPUT
	■	VEP03A53A	TBC C.B.A.		(RTL)
C9001		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C9002		ECQB1H473JZ	F.CAPACITOR 50V 0.047U	1	
C9003		ECEA1HKN010	E.CAPACITOR 50V 1U	1	
C9004		ECEA0JKA221	E.CAPACITOR 6.3V 220U	1	
C9005		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C9006		ECEA1HKAR47	E.CAPACITOR 50V 0.47U	1	
C9007		ECQB1H473JZ	F.CAPACITOR 50V 0.047U	1	
C9008		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C9009		ECQB1H473JZ	F.CAPACITOR 50V 0.047U	1	
C9010		ECEA1EKA4R7	E.CAPACITOR 25V 4.7U	1	
C9011		ECQB1H333KZ	F.CAPACITOR 50V 0.033U	1	
C9012		ECUM1H332KBN	C.CAPACITOR CH 50V 3300P	1	
C9013		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C9014		ECEA1HKAR47	E.CAPACITOR 50V 0.47U	1	
C9015		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C9016		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C9017		ECQB1H223KF	P.CAPACITOR 50V 0.022U	1	
C9018		ECEA1HKA3R3	E.CAPACITOR 50V 3.3U	1	
C9019		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C9020,21		ECEA1HKA2R2	E.CAPACITOR 50V 2.2U	2	
C9022		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C9023		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C9024		ECEA1EKA4R7	E.CAPACITOR 25V 4.7U	1	
C9025		ECUM1H152KBN	C.CAPACITOR CH 50V 1500P	1	
C9026		ECUM1H331JCN	C.CAPACITOR CH 50V 330P	1	
C9027		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C9028		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C9029		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C9030		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C9031,32		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C9033		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	1	
C9034		ECUM1H270JCN	C.CAPACITOR CH 50V 27P	1	
C9035		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C9036,37		ECEA1EKN4R7	E.CAPACITOR 25V 4.7U	2	
C9038		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C9039		ECEA0JKA220	E.CAPACITOR 6.3V 22U	1	
C9040		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C9041		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C9042		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C9043-50		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	8	
C9051		ECEA0JKA220	E.CAPACITOR 6.3V 22U	1	
C9052		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C9054		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C9055		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C9056		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C9057		ECEA0JKA220	E.CAPACITOR 6.3V 22U	1	
C9058		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C9059		ECEA0JKA220	E.CAPACITOR 6.3V 22U	1	
C9060		ECUM1H050CCN	C.CAPACITOR CH 50V 5P	1	
C9061		ECUM1H020CCN	C.CAPACITOR CH 50V 2P	1	
C9062		ECEA0JKA221	E.CAPACITOR 6.3V 220U	1	
C9063		ECUM1H222KBN	C.CAPACITOR CH 50V 2200P	1	
C9064		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C9065		ECUM1H682KBN	C.CAPACITOR CH 50V 6800P	1	
C9066		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C9067-70		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	4	
C9071		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C9072		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C9073		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C9076		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C9077		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C9078		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C9079		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C9080		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C9081		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C9082		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C9083,84		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C9085,86		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C9087		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C9088		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C9089		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C9098-00		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	3	
C9101		ECEA0JKA220	E.CAPACITOR 6.3V 22U	1	
C9102		ECEA0JKA470	E.CAPACITOR 6.3V 47U	1	
C9103		ECUM1H332KBN	C.CAPACITOR CH 50V 3300P	1	
C9501		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C9502,03		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	2	
C9504		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C9505		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C9506		ECEA1HKA3R3	E.CAPACITOR 50V 3.3U	1	
C9507,08		ECEA1CKA100	E.CAPACITOR 16V 10U	2	
C9509,10		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	2	
C9511		ECEA1HKA3R3	E.CAPACITOR 50V 3.3U	1	
C9512		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C9513		ECEA1HKAR22	E.CAPACITOR 50V 0.22U	1	
C9514		ECEA1CKA100	E.CAPACITOR 16V 10U	1	
C9515		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C9516		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C9517		ECEA1HKA010	E.CAPACITOR 50V 1U	1	
C9518		ECEA1CKA470	E.CAPACITOR 16V 47U	1	
C9519		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C9520-22		ECEA1C[illegible]0	E.CAPACITOR 16V 10U	3	
C9523,24		ECUM1H1[illegible]N	C.CAPACITOR CH 50V 0.01U	2	
C9525,26		ECEA1CKA100	E.CAPACITOR 16V 10U	2	
D9501		1SS254	DIODE	1	
FL9001-05		VLF0633	COIL	5	
FL9006		VLF0634	COIL	1	
FL9007		ELKAW103EB	FILTER	1	
FL9008		VLF0634	COIL	1	
FL9009		VLF0839	FILTER	1	
FL9010		VLF0838	FILTER	1	
FL9011		VLF0874	FILTER	1	
FL9012		VLF0855	FILTER	1	
FL9013		ELB4P034	FILTER	1	
FL9014		VLF0875	FILTER	1	
FL9015-18		VLF0634	COIL	4	
FL9019-21		VLF0630	COIL	3	
FL9022-26		ELKAW103EB	FILTER	5	
FL9501		ELB4H054	FILTER	1	

Ref No.	Part No.	Part Name & Description	Pcs	Remarks
IC9001	AN3942SB	IC	1	
IC9002	AN3496S	IC	1	
IC9003	MN74HC4066S	IC	1	
IC9004	BA19211BNT	IC	1	
IC9006	AN3915S	IC	1	
IC9007	SC371020FU	IC	1	
IC9008	SC371026FU	IC	1	
IC9501	CXL1009P	IC	1	
IC9502	AN78L09	IC	1	
IC9503	M52055FP	IC	1	
L9001	VLQEL05S22GJ	COIL 22UH	1	
L9002,03	ELESE101KA	COIL 100UH	2	
L9004	ELESE680KA	COIL H	1	
L9005	ELESE270KA	COIL H	1	
L9006	VLQ0188J2R2	COIL 2.2UH	1	
L9007	ELESE101KA	COIL 100UH	1	
L9008,09	VLQ0188J2R2	COIL 2.2UH	2	
L9010	VLQ0188J6R8	COIL 6.8UH	1	
L9011-14	VLQ0188J2R2	COIL 2.2UH	4	
L9018,19	VLP0054	COIL	2	
L9024	VLP0054	COIL	1	
L9501	ELESE101KA	COIL 100UH	1	
L9502	VLP0054	COIL	1	
L9503	VLP0053	COIL	1	
L9504,05	ELESE101KA	COIL 100UH	2	
L9506	VLP0054	COIL	1	
P9001	VJP1393T	CONNECTOR (MALE) 13P	1	
P9002	VJP1235T	CONNECTOR (MALE) 8P	1	
Q9001	MSB709	TRANSISTOR	1	
Q9003,04	MSD601	TRANSISTOR	2	
Q9006-09	MSD601	TRANSISTOR	4	
Q9010,11	MSB709	TRANSISTOR	2	
Q9012	MSD601	TRANSISTOR	1	
Q9013	MSB709	TRANSISTOR	1	
Q9014	2SA1022	TRANSISTOR	1	
Q9015	MSD601	TRANSISTOR	1	
Q9016	MSC2295	TRANSISTOR	1	
Q9017	MSD601	TRANSISTOR	1	
Q9018	MSB709	TRANSISTOR	1	
Q9019	MSD601	TRANSISTOR	1	
Q9020	MSC2295	TRANSISTOR	1	
Q9021	MSD601	TRANSISTOR	1	
Q9022	MSB709	TRANSISTOR	1	
Q9023	MSD601	TRANSISTOR	1	
Q9024	MSB709	TRANSISTOR	1	
Q9025	MSD601	TRANSISTOR	1	
Q9026,27	MSB709	TRANSISTOR	2	
Q9501,02	MSC2295	TRANSISTOR	2	
Q9503	MSB709	TRANSISTOR	1	
Q9504	MSD601	TRANSISTOR	1	
Q9505	MSB709	TRANSISTOR	1	
Q9506	MSD601	TRANSISTOR	1	
Q9507	MSB709	TRANSISTOR	1	
QR9001	MRN1404	TRANSISTOR-RESISTOR	1	
QR9004	MRN1404	TRANSISTOR-RESISTOR	1	
QR9007	MRN1404	TRANSISTOR-RESISTOR	1	
QR9010	MRN1404	TRANSISTOR-RESISTOR	1	
R9001-04	ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	4	
R9005	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R9006	ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R9007,08	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R9009	ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R9010-17	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	8	
R9021-23	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	3	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R9024	ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R9027-29	ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	3	
R9030	ERJ6GMYJ153	M.RESISTOR CH 1/10W 15K	1	
R9031	ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R9032	ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R9037	ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R9038	ERJ6GMYJ561	M.RESISTOR CH 1/10W 560	1	
R9039	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R9040	ERJ6GMYJ681	M.RESISTOR CH 1/10W 680	1	
R9041	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R9042	ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	1	
R9043	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R9044	ERJ6GMYJ681	M.RESISTOR CH 1/10W 680	1	
R9045	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R9046	ERJ6GMYJ391	M.RESISTOR CH 1/10W 390	1	
R9047,48	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R9049	ERJ6GMYJ683	M.RESISTOR CH 1/10W 68K	1	
R9050	ERJ6GMYJ331	M.RESISTOR CH 1/10W 330	1	
R9051,52	ERJ6GMYJ683	M.RESISTOR CH 1/10W 68K	2	
R9053	ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R9054,55	ERJ6GMYJ683	M.RESISTOR CH 1/10W 68K	2	
R9056	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R9057	ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R9058	ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	1	
R9059,60	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R9061	ERJ6GMYJ681	M.RESISTOR CH 1/10W 680	1	
R9062	ERJ6GMYJ391	M.RESISTOR CH 1/10W 390	1	
R9063	ERJ6GMYJ202	M.RESISTOR CH 1/10W 2K	1	
R9064	ERJ6GMYJ132	M.RESISTOR CH 1/10W 1.3K	1	
R9065	ERJ6GMYJ432	M.RESISTOR CH 1/10W 4.3K	1	
R9066	ERJ6GMYJ153	M.RESISTOR CH 1/10W 15K	1	
R9067	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R9068-70	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	3	
R9071	ERJ6GMYJ331	M.RESISTOR CH 1/10W 330	1	
R9072	ERJ6GMYJ561	M.RESISTOR CH 1/10W 560	1	
R9073	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R9074	ERJ6GMYJ331	M.RESISTOR CH 1/10W 330	1	
R9075	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R9076	ERJ6GMYJ561	M.RESISTOR CH 1/10W 560	1	
R9077	ERJ6GMYJ331	M.RESISTOR CH 1/10W 330	1	
R9078	ERJ6GMYJ561	M.RESISTOR CH 1/10W 560	1	
R9079	ERJ6GMYJ331	M.RESISTOR CH 1/10W 330	1	
R9080,81	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R9082	ERJ6GMYJ561	M.RESISTOR CH 1/10W 560	1	
R9084	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R9087	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R9088	ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	1	
R9093	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R9094	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R9095	ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	1	
R9096	ERJ6GMYJ123	M.RESISTOR CH 1/10W 12K	1	
R9097	ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R9098	ERJ6GMYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R9099	ERJ6GMYJ391	M.RESISTOR CH 1/10W 390	1	
R9100,01	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	2	
R9104	ERJ6GMYJ222	M.RESISTOR CH 1/10W 2.2K	1	
R9105	ERJ6GMYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R9106	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R9107	ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R9108,09	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	2	
R9501,02	ERJ6GMYJ223	M.RESISTOR CH 1/10W 22K	2	
R9503,04	ERJ6GMYJ221	M.RESISTOR CH 1/10W 220	2	
R9505	ERJ6GMYJ105	M.RESISTOR CH 1/10W 1M	1	
R9506	ERJ6GMYJ224	M.RESISTOR CH 1/10W 220K	1	
R9507	ERJ6GMYJ681	M.RESISTOR CH 1/10W 680	1	
R9508	ERJ6GMYJ471	M.RESISTOR CH 1/10W 470	1	
R9509-13	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	5	
R9514,15	ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	2	
R9516	ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R9517,18	ERJ6GMYJ472	M.RESISTOR CH 1/10W 4.7K	2	
R9519	ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R9520	ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
VR9001	EVNF6SA00B23	V.RESISTOR	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
VR9002		EVNDXAA00B54	V.RESISTOR	1	
VR9003		EVMF6SA00B13	V.RESISTOR	1	
VR9004		EVNDXAA00B24	V.RESISTOR	1	
VR9005,06		EVMF6SA00B14	V.RESISTOR	2	
VR9007		EVMF6SA00B13	V.RESISTOR	1	
VR9501		EVMF6SA00B23	V.RESISTOR	1	
X9002		VSX0617	CRYSTAL OSCILLATOR	1	
X9501		VSX0323	CRYSTAL OSCILLATOR	1	
			MISCELLANEOUS		
		VSC4116	SHIELD COVER (MAIN)	1	
		VSC3620	SHIELD COVER (BOTTOM)	1	
		VSC3618	SHIELD COVER (TOP)	1	
		VMX1921	SPACER	1	
		XTN3+6F	SCREW	4	
	■	VEP05176G	HEAD AMP C.B.A.		(RTL)
C503		ECUM1C1052FN	C.CAPACITOR CH 16V 1U	1	
C505-08		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	4	
C509		ECUM1H332KBN	C.CAPACITOR CH 50V 3300P	1	
C510,11		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	2	
C512		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C513		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C514		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C515,16		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	2	
C517,18		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	2	
C519,20		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	2	
C521		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C523-25		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	3	
C526		VCEA0JAC221	E.CAPACITOR 6.3V 220U	1	
C527		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C531		ECUM1H330JCN	C.CAPACITOR CH 50V 33P	1	
C532		ECUM1H560JCN	C.CAPACITOR CH 50V 56P	1	
C533,34		ECUM1H121JCN	C.CAPACITOR CH 50V 120P	2	
C535		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C536		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C537		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C538,39		ECUM1H680JCN	C.CAPACITOR CH 50V 68P	2	
C540		ECEA1CK470	E.CAPACITOR 16V 47U	1	
C551		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C552-54		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	3	
C555		ECEA0JPK221	E.CAPACITOR 6.3V 220U	1	
C556,57		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	2	
C559		ECUM1C1052FN	C.CAPACITOR CH 16V 1U	1	
C560,61		ECUM1H471JCN	C.CAPACITOR CH 50V 470P	2	
C562,63		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	2	
C564		ECUM1C1052FN	C.CAPACITOR CH 16V 1U	1	
C565		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	1	
C566		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	1	
C567		ECUM1H102KBN	C.CAPACITOR CH 50V 1000P	1	
C569		ECUM1C1052FN	C.CAPACITOR CH 16V 1U	1	
IC501		AN3336SB	IC	1	
IC502		AN3370K	IC	1	
IC551		BA7743FS	IC	1	
L501-03		VLQ0540K330	COIL 33UH	3	
L504		VLQ0540J5R6	COIL 5.6UH	1	
L551,52		VLQ0540K330	COIL 33UH	2	
P501		VJS3537B020G	CONNECTOR (FEMALE) 20P	1	
P502		VJS2603	CONNECTOR (FEMALE)	1	
Q501		MSB709	TRANSISTOR	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
Q502		MSD601	TRANSISTOR	1	
QR501		MRN2404	TRANSISTOR-RESISTOR	1	
R501		ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	1	
R502		ERJ6GEYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R503		ERJ6GMYG752	M.RESISTOR CH 1/10W 7.5K	1	
R504		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R505		ERJ6GMYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R506		ERJ6GMYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R507		ERJ6GMYJ391	M.RESISTOR CH 1/10W 390	1	
R508		ERJ6GMYJ331	M.RESISTOR CH 1/10W 330	1	
R509-12		ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	4	
R513		ERJ6GMYJ103	M.RESISTOR CH 1/10W 10K	1	
R514		ERJ6GMYJ274	M.RESISTOR CH 1/10W 270K	1	
R517		ERJ6GMYJ100	M.RESISTOR CH 1/10W 10	1	
R518,19		ERJ6GMYJ101	M.RESISTOR CH 1/10W 100	2	
R520		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R521,22		ERJ6GMYJ822	M.RESISTOR CH 1/10W 8.2K	2	
R523		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	1	
R524		VRED034E182	M.RESISTOR CH 1/10W 1.8K	1	
R525		VRED034E103	M.RESISTOR CH 1/10W 10K	1	
R526		ERJ6GMYC133	M.RESISTOR CH 1/10W 13K	1	
R551		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R552		ERJ6GMYJ391	M.RESISTOR CH 1/10W 390	1	
R553		ERJ6GMYJ273	M.RESISTOR CH 1/10W 27K	1	
R554		ERJ6GMYJ243	M.RESISTOR CH 1/10W 24K	1	
R556		ERJ6GMYJ333	M.RESISTOR CH 1/10W 33K	1	
R557		ERJ6GMYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R558		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R559,60		ERJ6GMYJ152	M.RESISTOR CH 1/10W 1.5K	2	
R561		ERJ6GMYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R562		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
R563		VRED034E100	M.RESISTOR CH 1/10W 10	1	
R564		ERJ6GMYJ224	M.RESISTOR CH 1/10W 220K	1	
R565		ERJ6GMYJ473	M.RESISTOR CH 1/10W 47K	1	
R566		ERJ6GMYJ273	M.RESISTOR CH 1/10W 27K	1	
R567		ERJ6GMYJ153	M.RESISTOR CH 1/10W 15K	1	
R568		ERJ6GMYJ2[illegible]	[illegible]RESISTOR CH 1/10W 270	1	
R569		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R570		ERJ6GMYJ102	M.RESISTOR CH 1/10W 1K	1	
			MISCELLANEOUS		
		VSC3714	SHIELD COVER (TOP)	1	
		VSC3478	SHIELD COVER (MAIN)	1	
		VSC3715	SHIELD COVER (BOTTOM)	1	
	■	VEP06926C	VR C.B.A.		(RTL)
C6501,02		ECUM1H223KBN	C.CAPACITOR CH 50V 0.022U	2	
C6503,04		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	2	
C6505		ECEA1HKA3R3	E.CAPACITOR 50V 3.3U	1	
C6506		VCEA1HAC3R3	CAPACITOR	1	
C6507		ECEA1AKA330	E.CAPACITOR 6.3V 33U	1	
C6508		ECEA1CKA330	E.CAPACITOR 16V 33U	1	
C6509		ECUM1H1032FN	C.CAPACITOR CH 50V 0.01U	1	
C6510		ECEA0JK470	E.CAPACITOR 6.3V 47U	1	
C6511-14		ECUM1H1042FN	C.CAPACITOR CH 50V 0.1U	4	
C6515,16		ECUM1H101JCN	C.CAPACITOR CH 50V 100P	2	
IC6501		[illegible]RG172	IC	1	
IR6501		[illegible]6407	IR RECEIVER UNIT	1	
L6501,02		ELESE471KA	COIL	2	
L6503,04		ELESE221KA	COIL 220UH	2	

Ref.No		Part No.	Part Name & Description	Pcs	Remarks
L6506,07		ELESE101KA	COIL 100UH	2	
P6502		VJP1251T	CONNECTOR (MALE) 11P	1	
PS6501,02		VJS3405A011A	CONNECTOR (FEMALE) 11P	2	
R6501		ERJ6GEYG332	M.RESISTOR CH 1/10W 3.3K	1	
R6502		ERJ6GEYG331	M.RESISTOR CH 1/10W 330	1	
R6503,04		ERJ6GEYG271	M.RESISTOR CH 1/10W 270	2	
R6505		ERJ6GEYG332	M.RESISTOR CH 1/10W 3.3K	1	
R6506		ERJ6GEYG331	M.RESISTOR CH 1/10W 330	1	
R6508,09		ERJ6GEYJ222	M.RESISTOR CH 1/10W 2.2K	2	
R6511		ERDS2TJ470	C.RESISTOR 1/4W 47	1	
SW6501,02		EVQ11409K	SWITCH	2	
VR6501		EWAKABX15C23	V.RESISTOR	1	
VR6502		EWAKFKX15B24	V.RESISTOR	1	
VR6503		EWANYJX1054J	V.RESISTOR	1	
			MISCELLANEOUS		
		VEJ1429	FRONT JACK PLATE	1	
		VYC0599	Hi-Fi REC VR COVER UNIT	1	
		VGU4495	Hi-Fi REC VR KNOB	2	
	■	VEP07739G	TIMER C.B.A.		(RTL)
C1701		ECEA1CKA101	E.CAPACITOR 16V 100U	1	
C1702		ECUM1H103ZFN	C.CAPACITOR CH 50V 0.01U	1	
C1703		ECKD2H471KB	E.CAPACITOR 500V 470P	1	
C1704		ECEA1VKA220	E.CAPACITOR 35V 22U	1	
C1705		ECKF1H103ZF	C.CAPACITOR 50V 0.01U	1	
C1706		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7501		ECRHC030E11	V.CAPACITOR	1	
C7502		ECFA0JKS330	E.CAPACITOR 6.3V 33U	1	
C7503		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7504		ECUM1H223KBN	C.CAPACITOR CH 50V 0.022U	1	
C7505,06		ECEA1EKS4R7	E.CAPACITOR 25V 4.7U	2	
C7507,08		ECUM1H473ZFN	C.CAPACITOR CH 50V 0.047U	2	
C7509		ECUM1H060DCN	C.CAPACITOR CH 50V 6P	1	
C7510		ECUM1H180JCN	C.CAPACITOR CH 50V 18P	1	
C7511		ECUM1H220JCN	C.CAPACITOR CH 50V 22P	1	
C7512		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7513		ECEA0JKA221	E.CAPACITOR 6.3V 220U	1	
C7514,15		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C7517		ECEA0JKS470	E.CAPACITOR 6.3V 47U	1	
C7518		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7519-30		ECUM1H270JCN	C.CAPACITOR CH 50V 27P	12	
C7531,32		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	2	
C7533-36		ECUM1H270JCN	C.CAPACITOR CH 50V 27P	4	
C7537		ECEA1HKA220	E.CAPACITOR 50V 22U	1	
C7538		ECUM1H104ZFN	C.CAPACITOR CH 50V 0.1U	1	
C7539		ECUM1H561JCN	C.CAPACITOR CH 50V 560P	1	
D1701		MA1270-H	DIODE	1	
D1702		MA185	DIODE	1	
D7501		MA3075	DIODE	1	
D7502-06		MA221	DIODE	5	
D7510		MA221	DIODE	1	
D7512		MA221	DIODE	1	
D7514		MA221	DIODE	1	
D7517,18		MA221	DIODE	2	
D7520		MA221	DIODE	1	
D7522		MA221	DIODE	1	
D7526		MA221	DIODE	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
D7531,32		MA221	DIODE	2	
D7534,35		MA221	DIODE	2	
D7546-50		MA221	DIODE	5	
D7551-53		MA73	DIODE	3	
D7556,57		LN81RCPHL	LED	2	
D7559,60		LN81RCPHL	LED	2	
D7562,63		MA221	DIODE	2	
DP7501		VSL0276	DISPLAY TUBE	1	
IC7501		M37502V4BS	IC	1	
IC7502		PST7026	IC	1	
IC7503		XLJ9021B	IC	1	
IC7504		PST7043	IC	1	
IC7505		BA6810S	IC	1	
L7501		VLQEL05S101K	COIL 100UH	1	
L7502		VLQ0188J330	COIL 33UH	1	
P7501,02		VJS3537A020G	CONNECTOR (FEMALE) 20P	2	
P7503		VJP3234B010	CONNECTOR (MALE) 10P	1	
P7504		VJP1246T	CONNECTOR (MALE) 6P	1	
P7505,06		VJS2183	CONNECTOR (FEMALE)	2	
PP7501,02		VJP3405A011W	CONNECTOR (MALE) 11P	2	
Q1701		2SD973A-R	TRANSISTOR	1	
Q7501,02		MSD601	TRANSISTOR	2	
QR7501,02		MRN2403	TRANSISTOR-RESISTOR	2	
QR7503		MRN2402	TRANSISTOR-RESISTOR	1	
QR7506		MRN1402	TRANSISTOR-RESISTOR	1	
QR7507		MRN1404	TRANSISTOR-RESISTOR	1	
QR7508-11		MRN2404	TRANSISTOR-RESISTOR	4	
QR7512-14		MRN2403	TRANSISTOR-RESISTOR	3	
R1701		ERJ6GEYJ332	M.RESISTOR CH 1/10W 3.3K	1	
R1702		ERDS2TJ101	C.RESISTOR 1/4W 100	1	
R1703		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
R7501,02		ERJ6GEYJ820	M.RESISTOR CH 1/10W 82	2	
R7503		ERJ6GEYG223	M.RESISTOR CH 1/10W 22K	1	
R7504		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R7505-07		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	3	
R7508		ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R7509		ERJ6GEYJ331	M.RESISTOR CH 1/10W 330	1	
R7510		ERJ6GEYK106	M.RESISTOR CH 1/10W 10M	1	
R7511		ERJ6GEYJ224	M.RESISTOR CH 1/10W 220K	1	
R7512,13		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	2	
R7514-16		ERJ6GEYJ332	M.RESISTOR CH 1/10W 3.3K	3	
R7517,18		ERJ6GEYJ473	M.RESISTOR CH 1/10W 47K	2	
R7519-22		ERJ6GEYJ332	M.RESISTOR CH 1/10W 3.3K	4	
R7525,26		ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	2	
R7528,29		ERJ6GMZOR00	M.RESISTOR 1/10W 0	2	
R7531-41		ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	11	
R7542-56		ERJ6GEYJ332	M.RESISTOR CH 1/10W 3.3K	15	
R7557-59		ERJ6GEYJ681	M.RESISTOR CH 1/10W 680	3	
R7560-62		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	3	
R7564		ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R7565		ERJ6GEYJ392	M.RESISTOR CH 1/10W 3.9K	1	
R7566		ERJ6GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R7567		ERJ6GEYJ272	M.RESISTOR CH 1/10W 2.7K	1	
R7568		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R7569		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
R7570		ERJ6GEYJ681	M.RESISTOR CH 1/10W 680	1	
R7571		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R7572		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R7573		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R7574		ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	1	
RX7501,02		EXBF6E104J	RESISTOR-RESISTOR	2	
RX7503		EXBF8E104J	RESISTOR-RESISTOR	1	
SW7502,03		ESD172355	SWITCH	2	
SW7504-07		ESD172255	SWITCH	4	
SW7508,09		ESD172355	SWITCH	2	
SW7510		ESD172255	SWITCH	1	
T1701		ETE13K80AY	SWITCH	1	
VR4004		EVNCBAA00B53	V.RESISTOR	1	
X7501		VSX0506	CRYSTAL OSCILLATOR	1	
X7502		VSX0094	CRYSTAL OSCILLATOR	1	
			MISCELLANEOUS		
		VMD0504	LED HOLDER	4	
		VJF1043	FIP HOLDER	1	
	■	VEP01558C	POWER C.B.A.		(RTL)<!>
C1103		VCC0021	C.CAPACITOR	1	<!>
C1106		VCC0021	C.CAPACITOR	1	<!>
C1109		VCC0023	C.CAPASITOR	1	<!>
C1110		ECQU2A224MN	P.CAPACITOR 250V 0.22U	1	<!>
C1111		ECQU2A154MNB	P.CAPACITOR 250V 0.15U	1	<!>
C1112		ECEC2GG680	E.CAPACITOR 400V 68U	1	
C1113		ECQE6473KF	P.CAPACITOR 50V	1	
C1114		VCK0106K121	C.CAPACITOR	1	
C1115		ECA1VXLV470	E.CAPACITOR 35V 47U	1	
C1116		ECA1CXLV101	E.CAPACITOR 16V 100U	1	
C1117		ECKF1H102KB	C.CAPACITOR 50V 1000P	1	
C1118		ECKF1H271KB	E.CAPACITOR 50V 270U	1	
C1121		ECCD2H101J	C.CAPACITOR 500V 100P	1	
C1123		ECEA1JFE560	E.CAPACITOR 63V 56U	1	
C1124		ECEA1CFE331	E.CAPACITOR 16V 330U	1	
C1125		ECEA1DFZ681	E.CAPACITOR 20V 680U	1	
C1126		ECEA1AFZ681	E.CAPACITOR 6.3V 680U	1	
C1127		ECEA1JFE470	E.CAPACITOR 63V 47U	1	
C1128		ECEA1CFE121	E.CAPACITOR 16V 120U	1	
C1129		ECEA1DFZ681	E.CAPACITOR 20V 680U	1	
C1130		ECEA1AFZ681	E.CAPACITOR 6.3V 680U	1	
C1131-34		ECKF1H102ZF	C.CAPACITOR 50V 1000P	4	
C1135,36		ECA1CCE101	E.CAPACITOR 16V 100U	2	
C1139		ECKF1H103ZF	C.CAPACITOR 50V 0.01U	1	
C1140,41		ECA1CCE101	E.CAPACITOR 16V 100U	2	
D1102		EM1B	DIODE	1	<!>
D1103		AP01C	DIODE	1	
D1104		MA178	DIODE	1	
D1105		1SS254	DIODE	1	
D1106		MA4200H	DIODE	1	
D1107		MA723VT	DIODE	1	
D1108		10ELS2	DIODE	1	
D1109		MA185	DIODE	1	
D1110		FMLG12SP	DIODE	1	
D1111		FMBG14L	DIODE	1	
D1112		SV03YS	DIODE	1	
D1115-17		EM1B	DIODE	3	<!>
D1118		MA4056-LVT	DIODE	1	
D1119		1SS254	DIODE	1	
D1120		MA4120H	DIODE	1	
D1121,22		1SS254	DIODE	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
IC1101		STRM6547LF	IC	1	<!>
IC1103		SI3120C	IC	1	
IC1104		SI-3050CA	IC	1	
L1101,02		LLF18D221F	COIL	2	<!>
L1103-09		EXCELSA35	COIL	7	
L1110		VLP0074	COIL	1	
L1111,12		ELESE101KA	COIL 100UH	2	
L1113,14		ELC07B009	COIL	2	
L1115,16		VLP0083	COIL	2	
P1101		VJS2625	AC INLET	1	<!>
P1102		VJP1930T	CONNECTOR (MALE)	1	
P1103		VJP1149	CONNECTOR (MALE) 3P	1	
Q1101		PC120FY	TRANSISTOR	1	<!>
Q1102		2SD1996-R	TRANSISTOR	1	
R1101		ERC12AGM334	S.RESISTOR 1/2W 330K	1	<!>
R1102		VRE0087	M.RESISTOR	1	
R1103		ERG3SJ823	M.RESISTOR 1/16W 82K	1	
R1104,05		ERDS2FJ224	C.RESISTOR 1/4W 220K	2	
R1106		ERDS2FJ221	C.RESISTOR 1/4W 220	1	
R1109		ERDS2FJ561	C.RESISTOR 1/4W 560	1	
R1110		ERDS2FJ391	C.RESISTOR 1/4W 390	1	
R1111		ERX1SJ1R5	M.RESISTOR 1W 1.5	1	
R1112		ERDS2FJ103	C.RESISTOR 1/4W 10K	1	
R1113		ERDS2FJ682	C.RESISTOR 1/4W 68K	1	
R1114		ERDS2FJ101	C.RESISTOR 1/4W 100	1	
R1115		ERDS2TJ271	C.RESISTOR 1/4W 270	1	
R1122		EROS2CKG62R0	M.RESISTOR 1/2W 62	1	
R1123		EROS2CKG3001	M.RESISTOR 1/4W 3K	1	
R1124		EROS2CKG20R0	M.RESISTOR 1/2W 20	1	
R1125		EROS2CKG1201	M.RESISTOR 1/4W 1.2K	1	
R1126		ERDS1TJ562	C.RESISTOR 1/2W 5.6K	1	
R1127		ERDS2FJ224	C.RESISTOR 1/4W 220K	1	
T1101		VLT0718	TRANSFORMER	1	<!>
			MISCELLANEOUS		
		VJF0318	FUSE HOLDER	2	<!>
		VMZ2212	CAPACITOR COVER	3	<!>
	■	VEX0126	CYLINDER DRIVE C.B.A.		(RTL)
C2901-03		ECEA1VSN2R2	E.CAPACITOR 35V 2.2U	3	
C2904-06		ECUM1E104KBM	C.CAPACITOR CH 25V 0.1U	3	
C2907		ECUM1E683KBM	C.CAPACITOR CH 25V 0.068U	1	
C2908		ECUM1E473KBM	C.CAPACITOR CH 25V 0.047U	1	
C2909		ECQV1H104JS	P.CAPACITOR 50V 0.1U	1	
C2910,11		ECEA1CKS100	E.CAPACITOR 16V 10U	2	
C2912		ECEA0JKS220	E.CAPACITOR 6.3V 22U	1	
IC2901		AN3815K	IC	1	
P2901		VJP2603W	CONNECTOR (MALE)	1	
P2902		VJP1232T	CONNECTOR (MALE) 5P	1	
R2901		ERX12SJR47	M.RESISTOR 1/2W 0.47	1	

Ref No.		Part No.	Part Name & Description	Pcs	Remarks
TH2901		VRH0017	THERMISTOR	1	
			MISCELLANEOUS		
		VMA8089	MAIN HOLDER	1	
	■	-----------	MECHANISM CONNECTION C.B.A.		
D1501		1N59L.VT	DIODE	1	
IC1501,02		ON1387	IC	2	
P1503		VJS3316A002	CONNECTOR (FEMALE) 2P	1	
P1504		VJS3317A004	CONNECTOR (FEMALE) 4P	1	
P1505		VJS3537B014G	CONNECTOR (FEMALE) 14P	1	
Q1501,02		PN205L-NC.VT	TRANSISTOR	2	
SW1501		VES0695	SWITCH	1	
SW1502		VST0176	SWITCH	1	
			MISCELLANEOUS		
		VMD2029	REEL GUIDE	1	
	■	-----------	MOTOR C.B.A.		
			MISCELLANEOUS		
		VJP3316B002	CONNECTOR (MALE) 2P	1	

INTERNAL REFERENCE CODES

NOTE: This chart is only for internal reference.
Do not order any parts according to these codes.

P. C. B.	FILM CODE
SYUGO (MAIN/SUB A/CAP DR)	HOA002-0231A
MAIN	HOA002-03A37
SUB AUDIO	HOA000-04417
CAP DRIVE	HOA000-02412
SYUGO (L&C/SUB L&C)	HOA000-0242A
LUMINANNCE & CHROMINANCE	HOA000-03A61
SUB LUMI & CHRO	HOA000-03A62
POWER	HOA000-01558
INPUT & OUTPUT	HOA000-03A72
VPS	HOA002-07538
TV DEMODULATOR	HOA000-07749
DECORDER	HOA000-07671
HEAD AMP	HOA004-05176
HI-FI AUDIO	HOA001-04410
VR	HOA001-06926
TIMER	HOA000-07739
REC RF AMP	HOA000-03A90
TBC	HOA000-03A53
MECHA CONNECTION	HOA000-00T87
CYLINDER DRIVE	HOA002-00R99
POWER TRANSISTER	HOA000-00S86
LOADING MOTOR	HOA000-00S75

ORDER NO. VSD9402M632

Service Manual

Sec. 1 *General Information*

Sec. 2 *Maintenance Procedures*

Sec. 3 *Mechanical Adjustment Procedur*

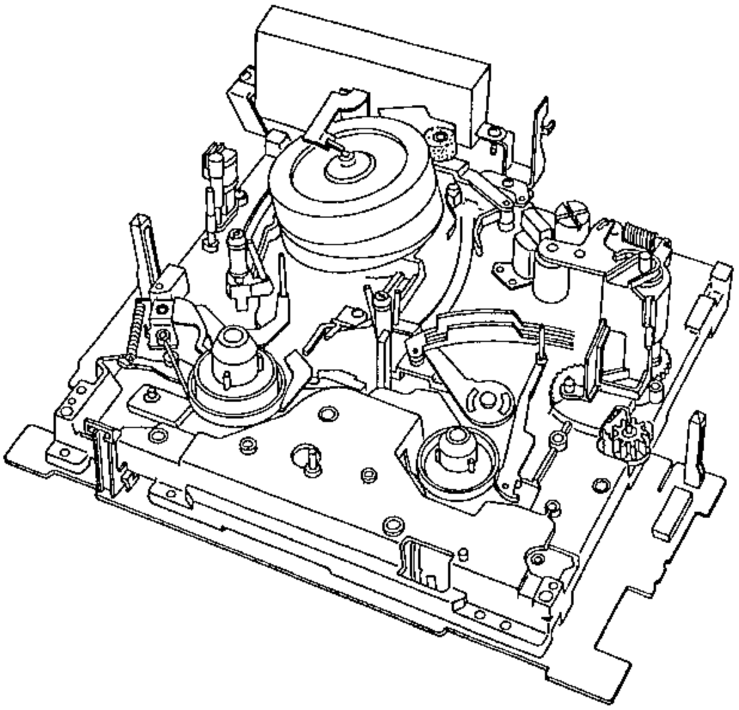
Sec. 4 *Assembly & Phase Adjustment Procedure*

Video Cassette Recorder

VHS

PAL

K-MECHANISM



IMPORTANT

The K-MECHANISM chassis are built in several Panasonic SVHS/VHS Video Cassette Recorder.

Thus, Properly file this service manual with the service manual of the relative video cassette recorder.

Panasonic

INTRODUCTION

This Service Manual contains the technical information which service personnel to understand and service the K-Mechanism.
The Maintenance Chart, Mechanical Parts List and Mechanical Specification, please refer to the service manual of each model.

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3-7. Adjustment of Tension Post Position 3-4
3-8. Adjustment of Back Tension 3-4
3-9. Adjustment of Capstan Housing & Stator 3-5
3-10. Adjustment of Thrust Gap 3-6
3-11. Adjustment of FG GAP 3-6
3-12. Pressing Force Confirmation of the Pressure Roller 3-6

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4-2. Assembly of parts on the Top Chassis 4-2
4-3. Assembly of parts on the Bottom Chassis 4-2
4-4. Assembly of Main Cam Gear and Sub Cam Gear 4-3
4-5. Assembly of Mode Switch 4-3
4-6. Assembly of Take-up and Supply Loading Gears 4-4
4-7. Assembly of Main Lever 4-4
4-8. Reinstall of the Cassette Compartment 4-6

SECTION 1
GENERAL INFORMATION

The K mechanism maintains the same high performance as G2 mechanism but with a smaller quantity of mounted parts, 40% less than G2 mechanism.

1-1. FEATURE of K MECHANISM

1-1-1. Parts Reduction

<K Mechanism>

a. Reduction in the number of drive parts through the use of a single motor to perform front loading and unit loading.
b. Direct drive of brakes and loading gears with the multi-function main lever.
c. Elimination of sub lever and solenoids.

<Front Loading Unit>

a. Elimination of a slide switch, to reduce wiring.
b. Elimination or combining the joint parts.
c. Smaller and thinner the top plate and rack parts.

1-1-2. No Adjustment of the following is required.

a. Take-up inclined position.
b. P5 Post height.

1-1-3. Reduced Gear Phase Position Alignments

The K Mechanism has only 6 gear phase alignment positions and G2 mechanism has 12 gear phase alignment positions.

1-2. OPERATION of K-MECHANISM

The K mechanism has two motors, the loading motor and capstan motor. The loading motor operates the front loading/unloading and tape loading/unloading. The capstan motor operates each mode.
The bottom C.B.A. connects the mechanism to the system control circuit. On the bottom C.B.A. there are take-up and supply photo-sensors, Sensor LED, Mode Switch Connector, Safety Tab Switch, Supply and Take-up Reel Sensors and Loading Motor Connector. All sensor information sent to the system control circuit.

1-3. EMERGENCY CASSETTE REMOVAL

If the electrical circuit is defective and the action of unloading and front unloading do not work properly, it is possible to removing cassette manually.
There are 2 methods of removing the cassette.

A. Battery Operation

1. Remove the bottom plate.
2. Connect the battery (Manganese-Type (AA)(R6) 3pcs./+4.5V) to P1503 as shown in Fig.G1.
3. After moving the loading post to the unloaded position, disconnect the battery to stop the loading motor.
4. Turn the capstan rotor clockwise to take up the tape.
5. Reconnect the battery to eject the cassette.

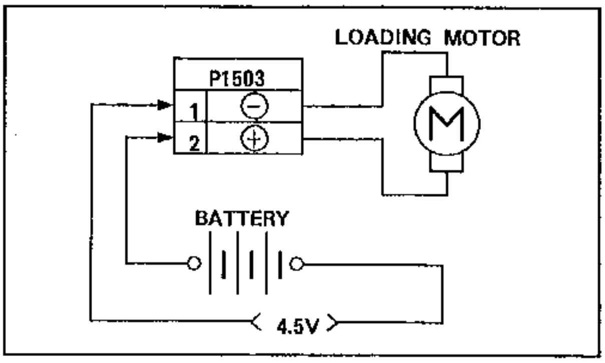


Fig.G1

B. Hand Operation

1. Remove the bottom plate.
2. Turn the worm gear to arrow mark direction (A) by finger as shown in Fig.G2 until loading post move to unloading position.
3. Turn the capstan rotor clockwise (B) to take up the tape.
4. Turn the worm gear again to eject the cassette.

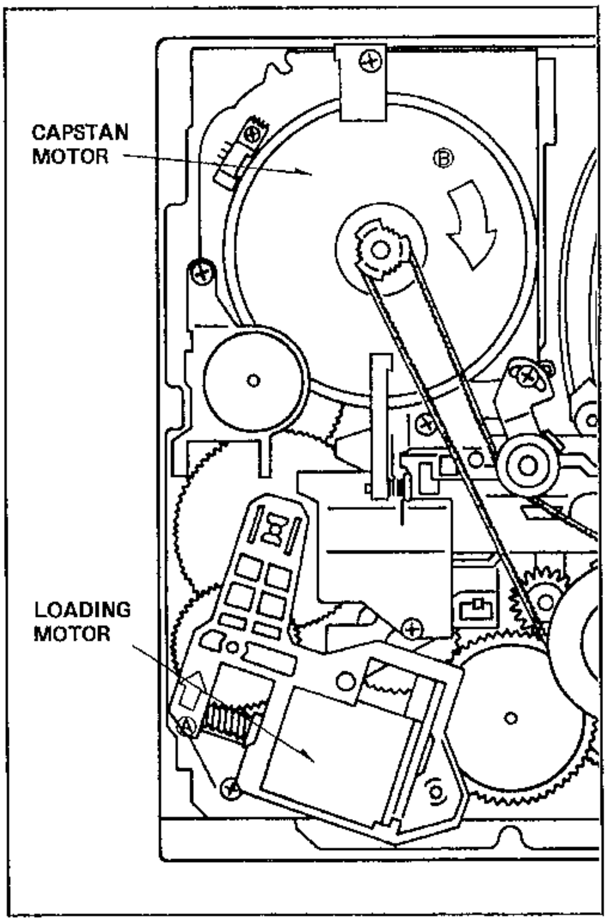

CAPSTAN MOTOR
B
LOADING MOTOR
A

Fig.G2

1-4. EJECT OPERATION

The main cam gear rotates in the direction of the arrow. The projection (B) of the carriage connection gear engages with the recession (A) of the main cam gear. The carriage connection gear rotates in the direction of the arrow to perform the Eject operation.

If the Eject operation is performed without the cassette installed while repairing or making the mechanical phase alignment, the main cam gear will not rotate. For performing the Eject operation with the cassette carriage not installed, it is necessary to rotate the carriage connection gear by hand in the direction of the arrow.

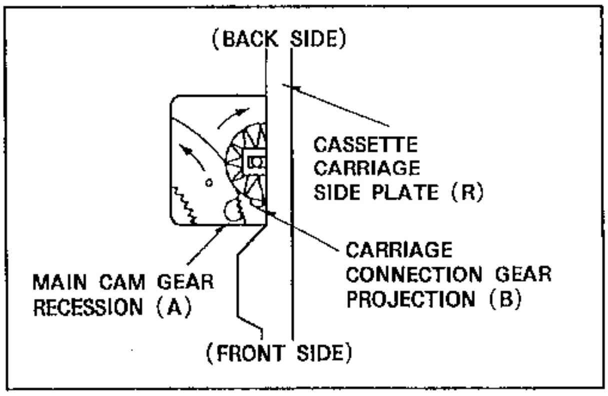

(BACK SIDE)
CASSETTE CARRIAGE SIDE PLATE (R)
CARRIAGE CONNECTION GEAR PROJECTION (B)
MAIN CAM GEAR RECESSION (A)
(FRONT SIDE)

Fig.G3

1-5. REMOVAL of MECHANISM

1-5-1. Removal of Top Plate

1. Unscrew 2 screws (A) and unlock 4 locking tabs to arrow direction as shown in Fig.G4.
2. Lift up the Top Plate.

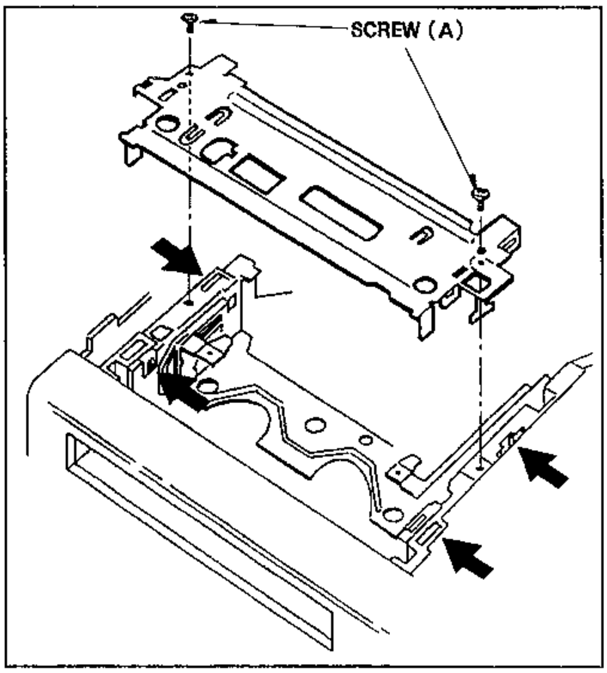


Fig.G4

1-5-2. Removal of Mechanism Chassis

1. Unscrew 2 screws (A) push the Holder Plate slightly to rear of the mechanism.
2. Unscrew a screw (B).
3. Disconnect all cable and connectors on the mechanism chassis.
   1)FE Head connector
   2)A/C Head connector
   3)Power Transistor connector
   4)Head Amp connector
   5)Capstan cable
4. Disconnect a Dew Sensor connector on the MAIN C.B.A.
5. Lift the mechanism chassis slightly and disconnect a connector of Cylinder Motor and a cable of Mechanism Connection C.B.A.
   Then mechanism chassis out of the unit.

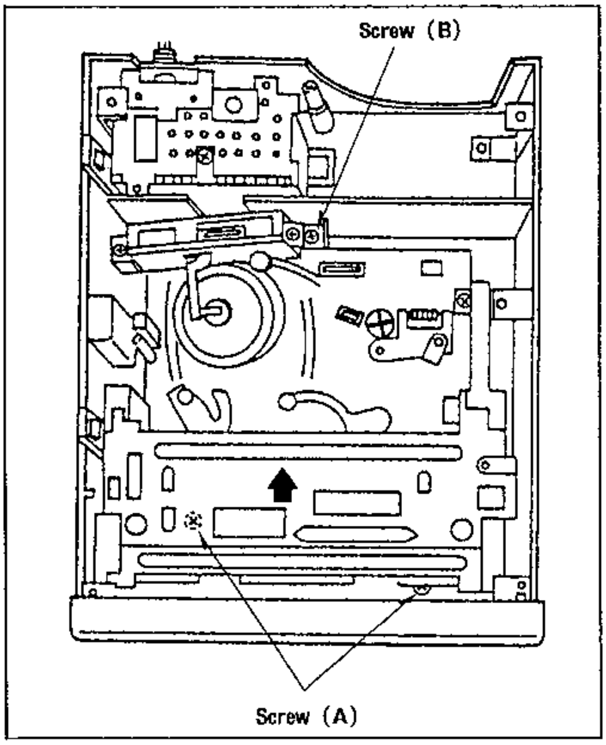


Fig.G5

1-5-3. Removal of Mechanism Connection C.B.A.

1. Unscrew 4 screws (C).
2. Lift up the Mechanism Connection C.B.A.

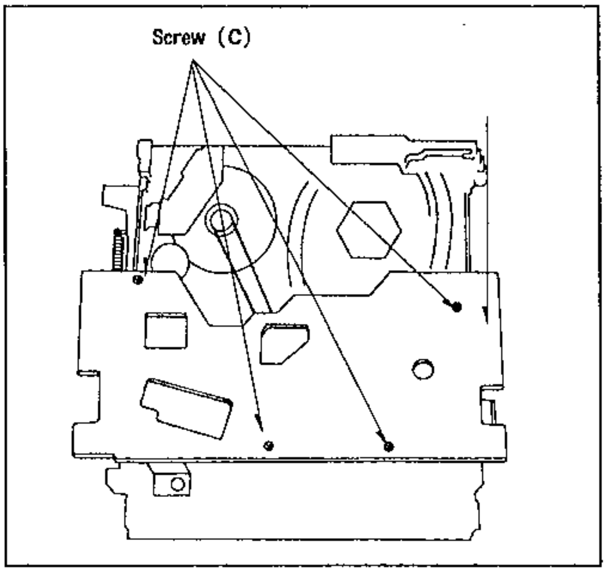
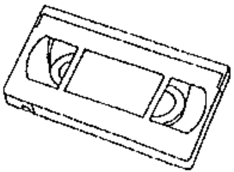
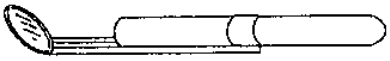
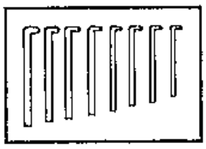
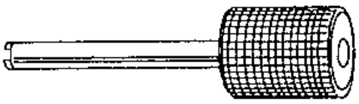
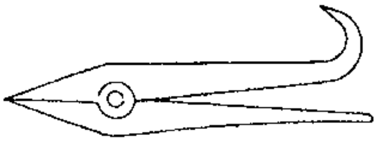
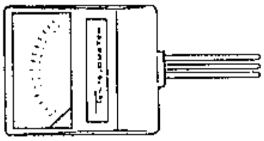
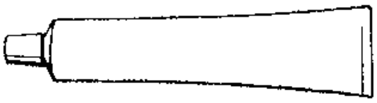
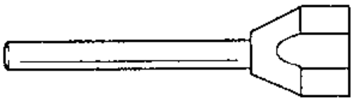
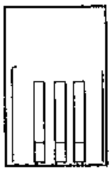
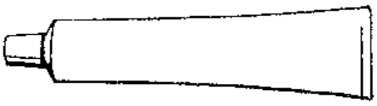
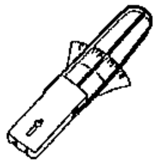
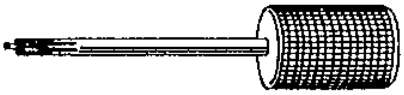


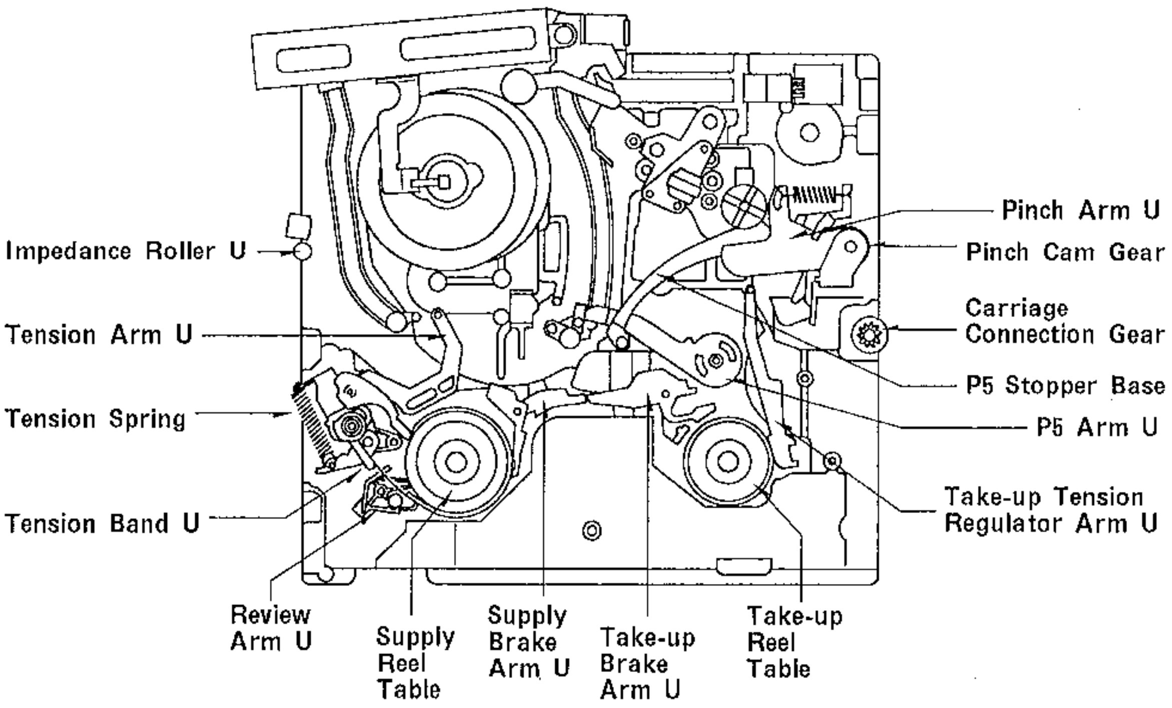
Fig.G6

1-6. SERVICE FIXTURES AND TOOLS

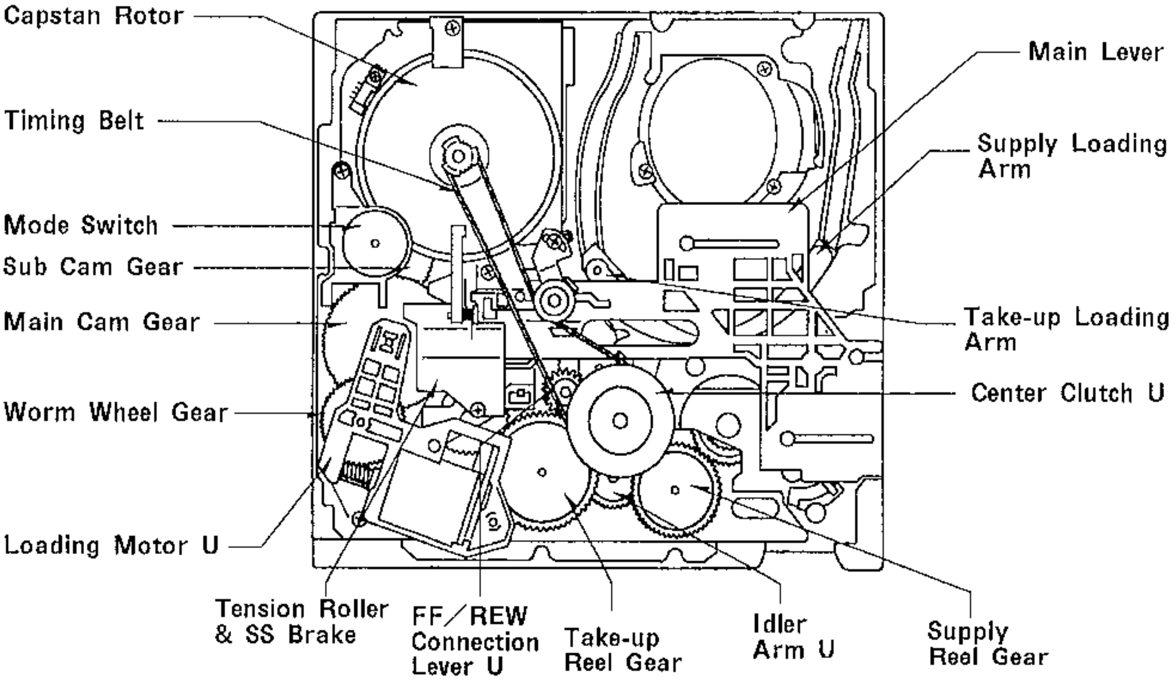
The regular maintenance is important to maintain the initial specification of the unit and prevent tape damage. The specified servicing fixture must be used to conduct adjustment.
The following fixtures, tools and measuring equipments are required to conduct complete Mechanical Adjustments.

VFM8080HQFP: VHS Alignment Tape 	VFK0948: Check Light 	VFK0326: Hex Wrench Set (0.7, 0.9, 1.2, 1.5, 1.6, 2.0, 2.4, 3.0mm) 
VFK0329: Post Adj. Screwdriver 	VFK0335: Retaining Ring Remover 	VFK0132: Back Tension Meter (Tentelometer,Made in U.S.A.) 
MOR265: Morlytone Grease (Black) (for metal parts) 	VFK0851: Center Fixing Tool 	VFK27: Head Cleaning Stick 
VFK0680: S.C.R. Grease (White) (for plastic parts) 	VFK66 ; Fan Type Tension Gauge 	VFK0330: Fine Adj. Screwdriver 

1-7. Mechanical Parts Location


Impedance Roller U
Tension Arm U
Tension Spring
Tension Band U
Review Arm U
Supply Reel Table
Supply Brake Arm U
Take-up Brake Arm U
Take-up Reel Table
Pinch Arm U
Pinch Cam Gear
Carriage Connection Gear
P5 Stopper Base
P5 Arm U
Take-up Tension Regulator Arm U

《TOP VIEW》


Capstan Rotor
Timing Belt
Mode Switch
Sub Cam Gear
Main Cam Gear
Worm Wheel Gear
Loading Motor U
Tension Roller & SS Brake
FF/REW Connection Lever U
Take-up Reel Gear
Idler Arm U
Supply Reel Gear
Main Lever
Supply Loading Arm
Take-up Loading Arm
Center Clutch U

《BOTTOM VIEW》

SECTION 2
MAINTENANCE PROCEDURE

The MAINTENANCE CHART please refer to the Maintenance Section which are shown in service manual for each model.

2-1. Replacement of the Upper Cylinder Unit

1. Unscrew 2 screws (A).
2. Unsolder arrows marked portions on the top of the Upper Cylinder as shown in Fig.M1.
3. Remove the Upper Cylinder.
4. The Upper Cylinder can be reinstalled by reversing the removal procedure.
   However, when insert the Upper Cylinder be extremely carefully so that marked portion of P.C.board of the Upper Cylinder correctly matches to mark of the Lower Cylinder as shown in Fig.M2.

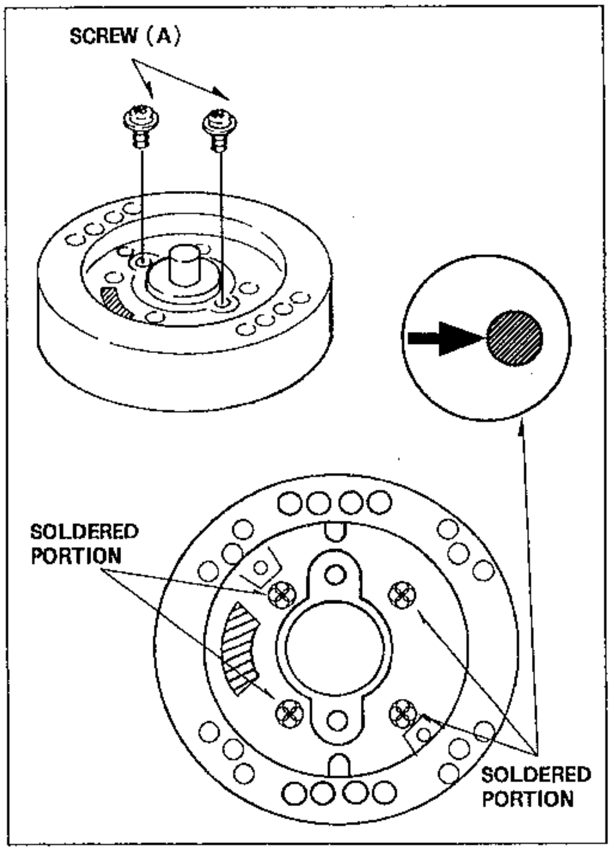


Fig.M1

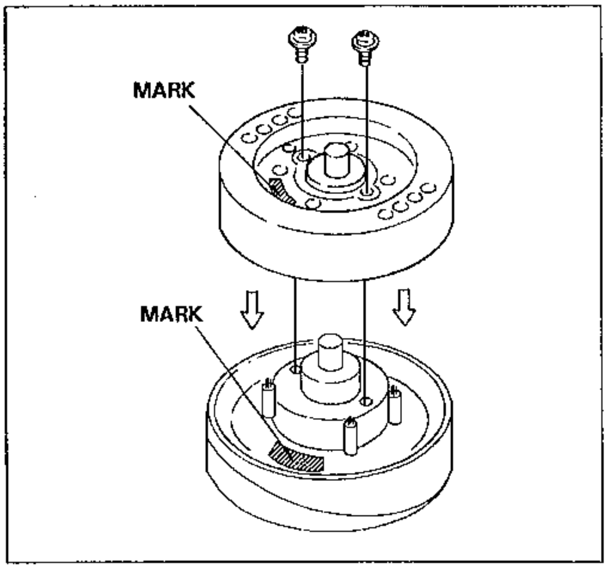


Fig.M2

<NOTE>

After reinstall the Upper Cylinder Unit should be perform Mechanical and Electrical adjustments.

3-2. FINE ADJUSTMENT of P2 and P3 POSTS
3-6. HORIZONTAL POSITION ADJUSTMENT

2-2. Replacement of Cylinder Unit

1. Remove the Earth Plate.
2. Unscrew 2 screws both side of Head Amp Unit and lift up the Head AMP.
3. Unscrew 3 screws (B) from back side of the mechanical chassis then remove the Cylinder Unit.
4. The Cylinder Unit can be reinstalled by reversing the removal procedure.

<Note>

After reinstall the Cylinder Unit should be perform Mechanical and Electrical adjustments.

3-2. FINE ADJUSTMENT of P2 and P3 POSTS
3-6. HORIZONTAL POSITION ADJUSTMENT

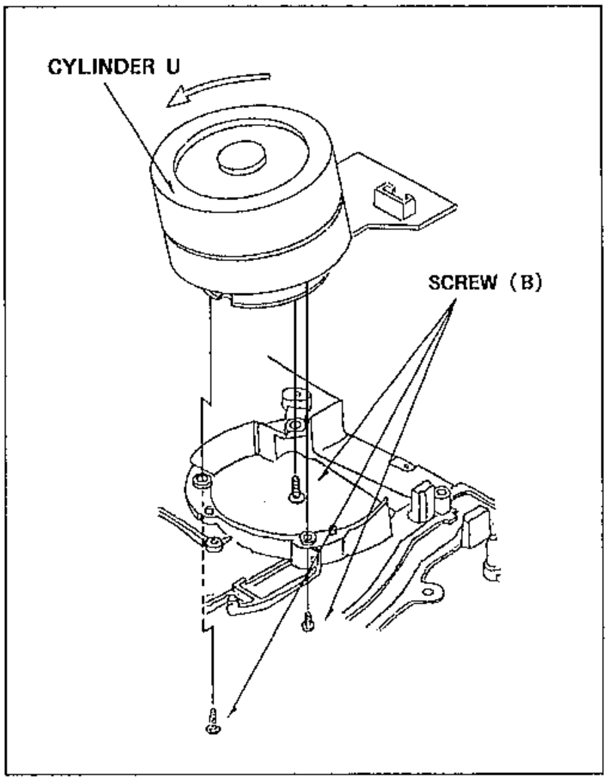


Fig.M3

2-3. Replacement of A/C HEAD Unit

1. Unscrew 3 screws (C)(D)(E) with the 3 springs then remove the A/C Head unit from the A/C Head Base.
2. The A/C Head Unit can be reinstalled by reversing the removal procedure.

<Note>

A space should be equality between the A/C Head U and the A/C Head Base when reinstall the A/C Head unit.

After reinstall the A/C Head Unit should be perform Mechanical and Electrical adjustments.

3-2. FINE ADJUSTMENT of P2 and P3 POSTS
3-3. COARSE ADJUSTMENT of A/C HEAD HEIGHT(1)
3-4. COARSE ADJUSTMENT of A/C HEAD HEIGHT(2)
3-5. FINE ADJUSTMENT of A/C HEAD HEIGHT
3-6. HORIZONTAL POSITION ADJUSTMENT

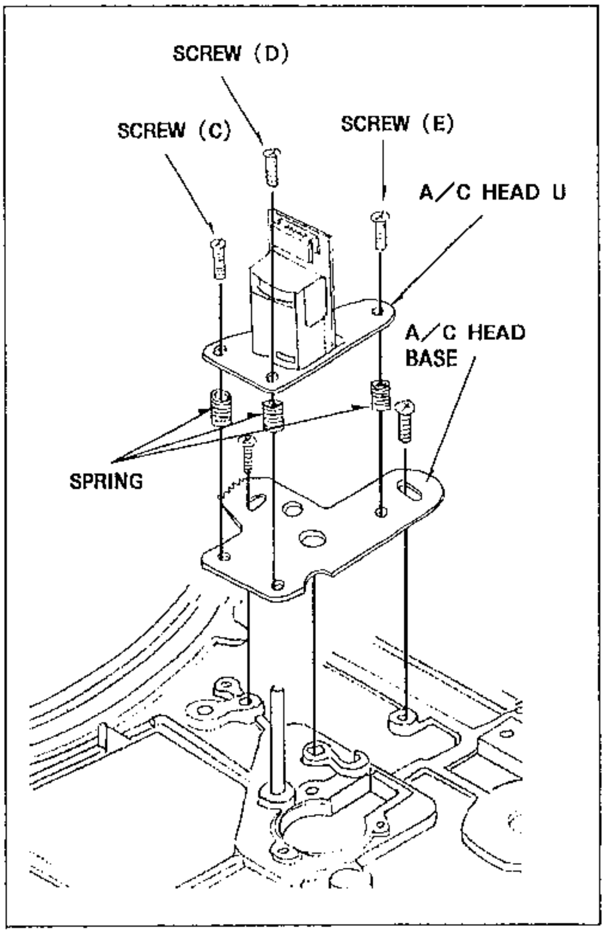


Fig.M4

2-4. Replacement of Full Erase Head Unit

1. Disconnect a connector (A).
2. Unscrew screw (F) then remove the FE Head.
3. FE Head Unit put into hole on the mechanical chassis and can be reinstalled by reversing the removal procedure.

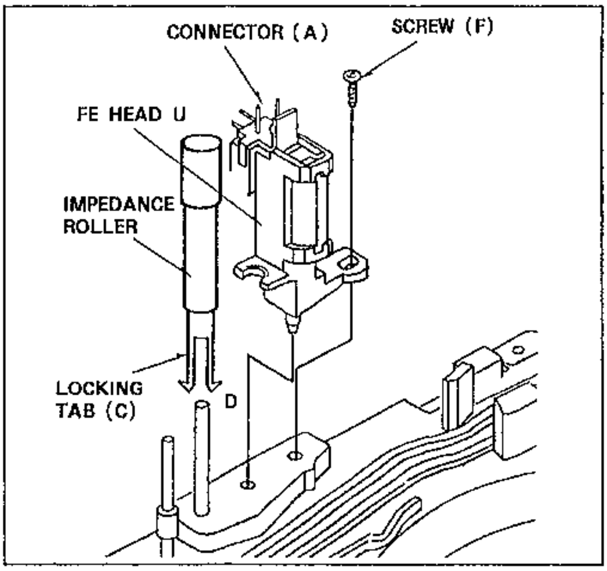


Fig.M5

2-5. Replacement of Capstan Rotor Unit and Stator Unit

1. Remove the Rotor Stopper.
2. Carefully lift up the Capstan Rotor from the Capstan Housing, taking care so as not loose the 2 Oil Seals.
3. Unscrew 3 screws (G) and remove the Capstan Stator Unit as shown in Fig.M6.
4. The Capstan Rotor and Stator can be reinstalled by reversing the removal procedure.

<Note>

After reinstall the Capstan Rotor and Stator Units should be perform Mechanical adjustment.

3-9. ADJUSTMENT of CAPSTAN HOUSING & STATOR
3-10. ADJUSTMENT of THRUST GAP
3-11. ADJUSTMENT of FG GAP

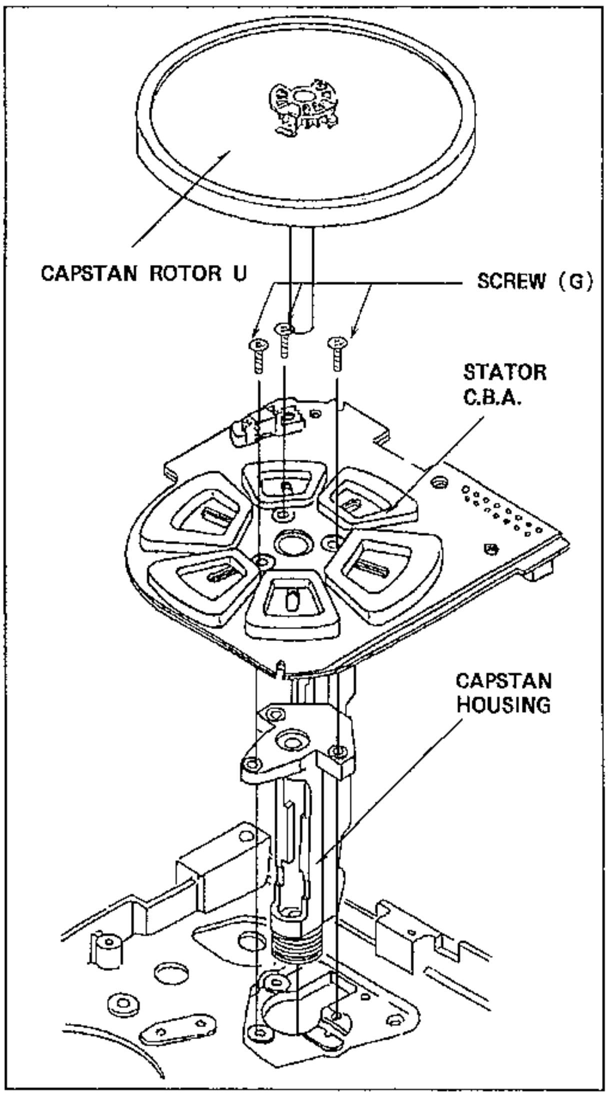


Fig.M6

2-6. Replacement of Impedance Roller Unit

1. Remove the Full Erase Head Unit with removal procedure(2-4).
2. Unlock then locking tab to direction of arrow mark as shown in Fig.M5 and remove the Impedance Roller Unit.
3. The Impedance Roller Unit can be reinstalled by reversing the removal procedure.

2-7. Replacement of Pinch Arm Unit

1. Unlock the locking tab on the Opener Piece and remove it from the shaft.
2. Remove the Pinch Arm Unit from the shaft.
3. The Pinch Arm Unit can be reinstalled by reversing the removal procedure.

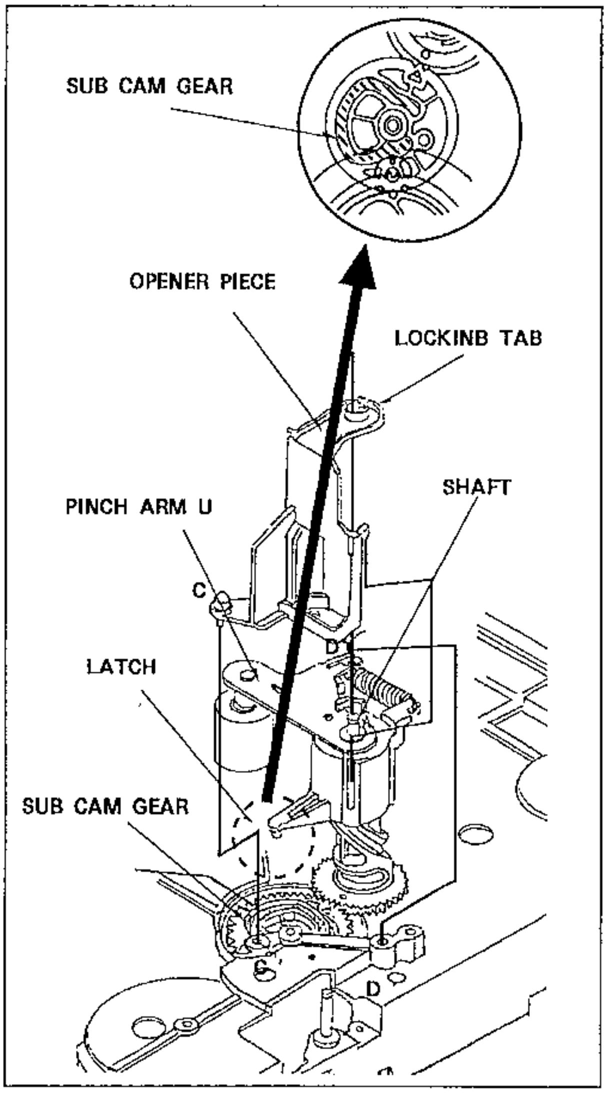

SUB CAM GEAR
OPENER PIECE
LOCKINB TAB
SHAFT
PINCH ARM U
C
LATCH
D
SUB CAM GEAR
C
D

Fig.M7

2-8. Replacement of Take-up and Supply Reel Base Units

A. Supply Reel Base Unit

1. Remove the Tension Band Unit on the Supply Reel Base Unit.
2. Push the Supply main Brake Arm to direction of arrow mark and unlock the locking tab on the Supply Reel Base then pull up the Supply Reel Base Unit as shown in Fig.M8.
3. The Supply Reel Base Unit can be reinstalled by reversing the removal procedure.

B. Take-up Reel Base Unit

1. Push the Take-up Main Brake Arm to direction of arrow mark and unlock the locking tab on the top of Take-up Reel Base then pull out the Supply Reel Base Unit as shown in Fig.M8.

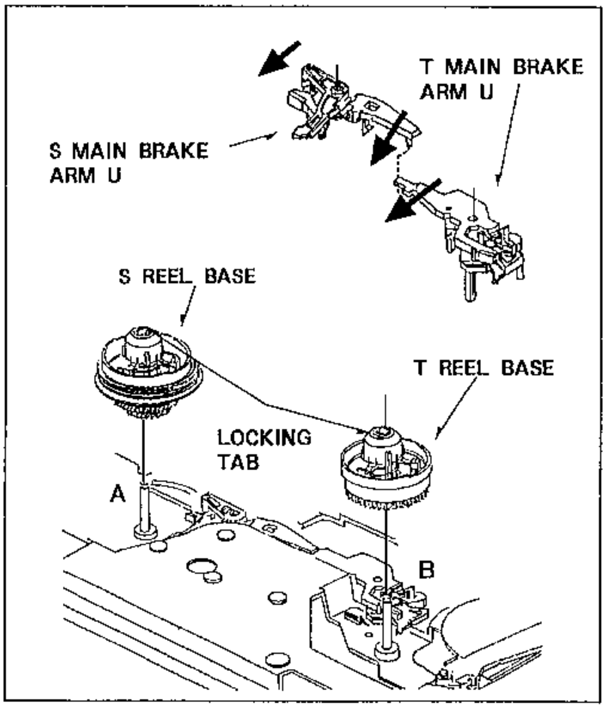

T MAIN BRAKE
ARM U
S MAIN BRAKE
ARM U
S REEL BASE
T REEL BASE
LOCKING
TAB
A
B

Fig.M8

2-9. Replacement of Take-up and Supply Brake Arm Unit.

1. Unlock the locking tab (A) to direction of arrow mark and lift up the Supply Brake Arm Unit.
2. Unlock the locking tab (B) and lift up the Take-up Brake Arm Unit.
3. Both Brake Arm Units can be reinstalled by reversing the removal procedure.
   However the boss (C) of the Supply Brake Arm Unit insert to hole (E) of mechanical chassis while pushing the Main Lever to direction of arrow mark as shown in Fig.M9. (expanded view)

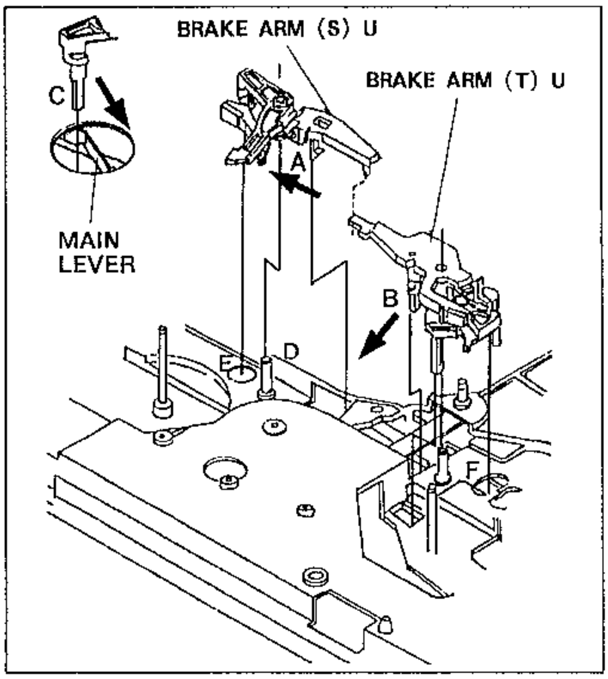

BRAKE ARM (S) U
BRAKE ARM (T) U
C
MAIN
LEVER
A
B
E
D
F

Fig.M9

2-10. Replacement of Tension Band Unit

1. Remove the cut washer (H) and lift up the Tension Arm Unit with the Tension Band and spring from the Tension Spring Arm.
2. Unlock the locking tab (A) to direction of arrow mark and remove the Tension Band from the Arm Unit.
3. Unlock the locking tab (B) and remove the Tension Band from the Tension Arm Unit.
4. The Tension Band Unit can be reinstalled by reversing the removal procedure.

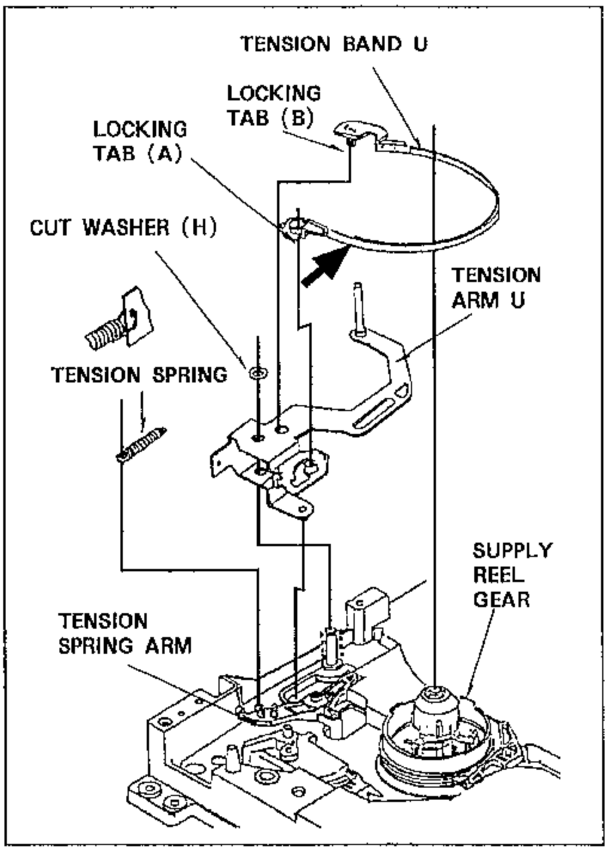

TENSION BAND U
LOCKING
TAB (B)
LOCKING
TAB (A)
CUT WASHER (H)
TENSION
ARM U
TENSION SPRING
SUPPLY
REEL
GEAR
TENSION
SPRING ARM

Fig.M10

2-11. Replacement of Loading Motor Unit

1. Unscrew screw (I).
2. Unlock the locking tab (A) from the top of the mechanical chassis.
3. Lift up the Loading Motor Bracket and push it to direction of arrow mark as shown in Fig.M11.
4. When reinstall the Loading Motor Unit, insert the locking hole (B') of Loading Motor Bracket Unit to shaft (B) on the mechanical chassis. Also a hole (C) of the loading Motor Unit must be matched to the shaft (C') as shown in Fig.M11.

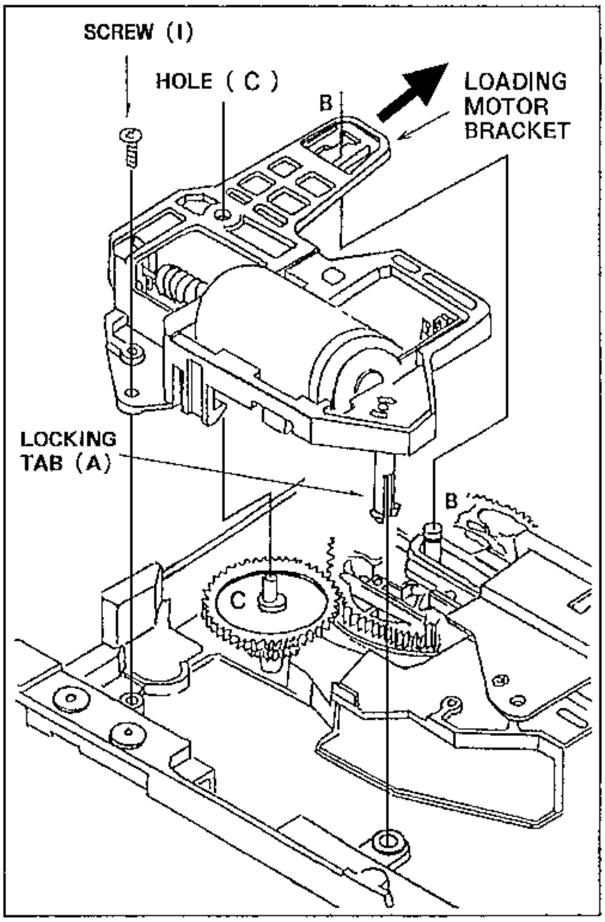

SCREW (I)
HOLE (C)
B
LOADING MOTOR BRACKET
LOCKING TAB (A)
B'
C

Fig.M11

2-12. Replacement of Cleaner Roller Unit

1. Unlock the locking tab (A) as shown in Fig.M12. and lift it up.
2. The Cleaner Roller Unit can be reinstalled by reversing the removal procedure.

3. Replacement of the Cleaner Rubber Unit.
Hold the Cleaner Roller Unit and unlock the locking tab (B) then lift it up.

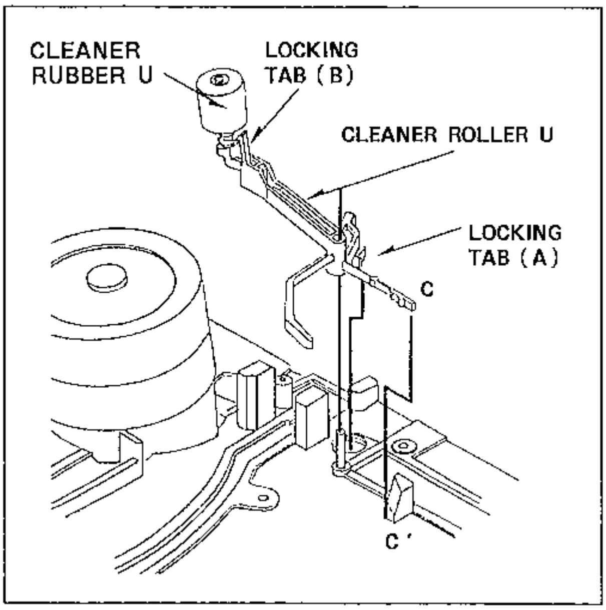

CLEANER RUBBER U
LOCKING TAB (B)
CLEANER ROLLER U
LOCKING TAB (A)
C
C'

Fig.M12

2-13. Replacement of SS Brake Base Unit and Timing Belt

1. Remove the Timing Belt.
2. Unscrew (J) and (K) then remove SS Brake Base Unit.
3. SS Brake Unit and Timing Belt can be reinstalled by reversing the removal procedure.

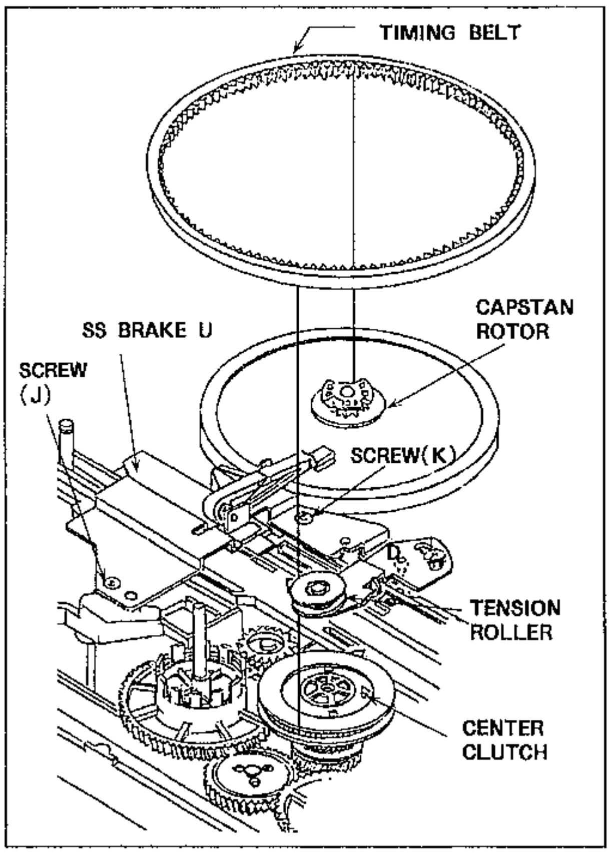

TIMING BELT
SS BRAKE U
CAPSTAN ROTOR
SCREW (J)
SCREW(K)
TENSION ROLLER
CENTER CLUTCH

Fig.M13

2-14. Replacement of Supply & Take-up Inclined Base Unit

1. Remove SS Brake Unit, Main Lever Unit and Supply and Take-up Loading Arm Unit refer to SECTION 2. and 3. in this service manual.
2. Remove the Inclined Holder base (A) from back side of mechanism chassis.
3. Remove the Supply and Take-up Inclined Base Units.
4. The both Inclined Base Units can be reinstalled by reversing the removal procedure.

<NOTE>
After reinstall the Inclined Base Unit should be perform Mechanical adjustment.

3-2. FINE ADJUSTMENT of P2 and P3 POSTS
3-5. FINE ADJUSTMENT of A/C HEAD HEIGHT
3-6. HORIZONTAL POSITION ADJUSTMENT of A/C HEAD

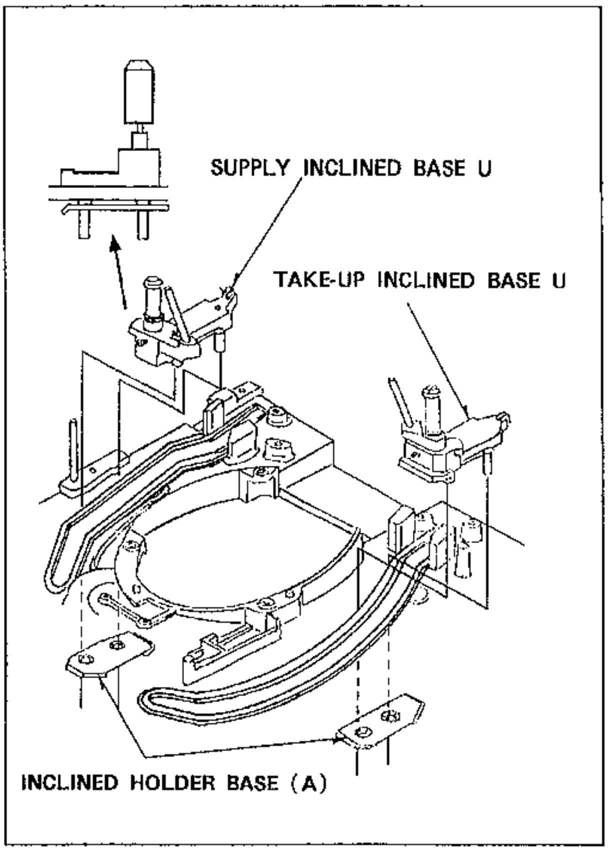

SUPPLY INCLINED BASE U
TAKE-UP INCLINED BASE U
INCLINED HOLDER BASE (A)

Fig.M14

SECTION 3
MECHANICAL ADJUSTMENT PROCEDURE

3-1. Coarse Adjustment of Tape Guide Post Height

1. Remove the Top Plate and Cassette Holder.
2. Turn the Loading Motor until the unloading completes.
3. Loosen the fixing screw of P2 and P3 Posts.
4. Rotate the P2 and P3 Posts clockwise to the end.
5. Rotate the P2 and P3 Posts twice counter-clockwise as shown in Fig.M15.
6. Install the Cassette Holder and Top Plate.
7. Playback the normal tape and make sure that the edge of not curing at the bottom or top end of the P1,P2,P3 and P4 Posts as shown in Fig.M17.

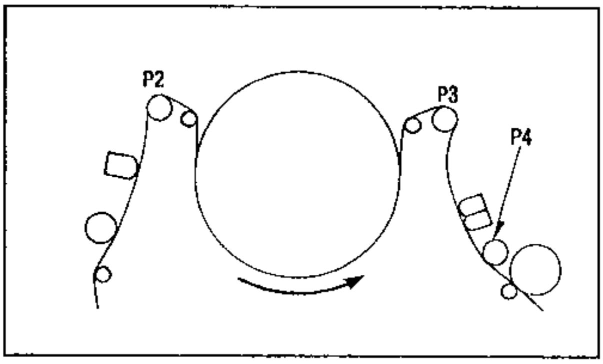


Fig.M16

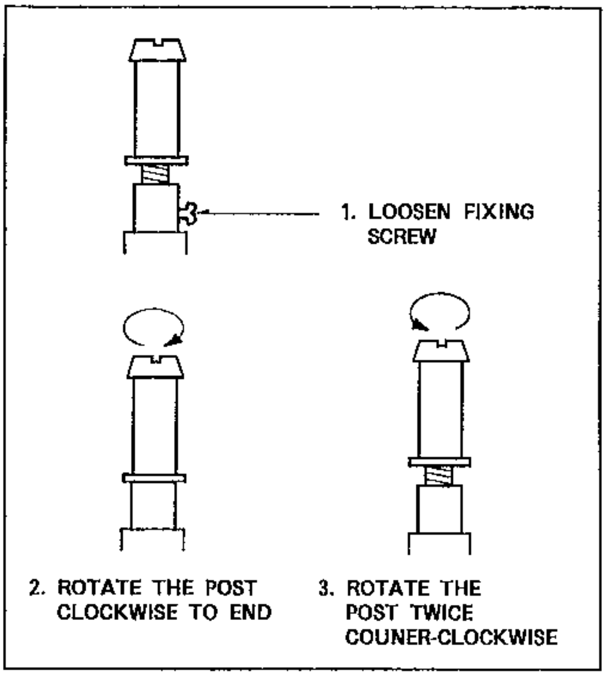

1. LOOSEN FIXING SCREW
2. ROTATE THE POST CLOCKWISE TO END
3. ROTATE THE POST TWICE COUNER-CLOCKWISE

Fig.M15

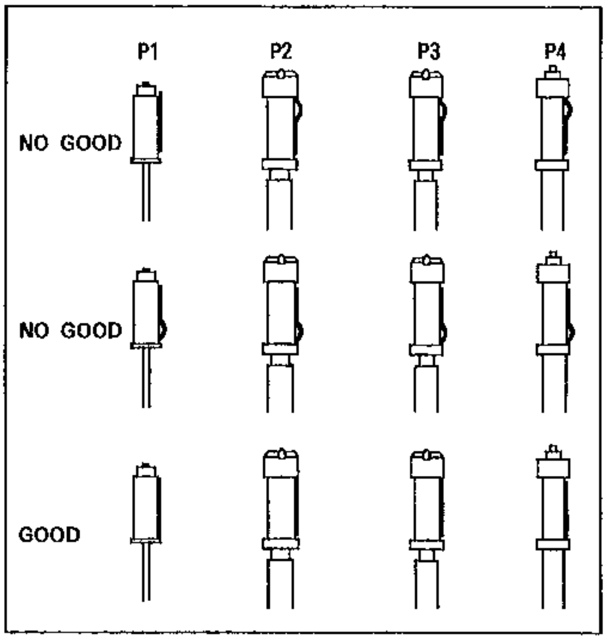

P1
P2
P3
P4
NO GOOD
NO GOOD
GOOD

Fig.M17

3-2. Fine Adjustment of P2 and P3 Posts

1. Connect the oscilloscope to the Test Point of the HEAD AMP (Video RF Envelope) and the head switching pulse as a triggering signal.

<NOTE>
TEST POINT please refer to the MECHANICAL ADJUSTMENT INFORMATION which are shown in service manual for each model.

2. Playback the 2nd portion of the alignment tape.
3. Press the tracking control button on the Front panel and adjust for maximum Video RF envelope.
4. If the RF envelope appears like example "A" or "B" in Fig.M18 then adjustment of the tape guide post (P3:Exit) is necessary.
5. Adjust the P3 post with the post adjustment screwdriver so that the RF envelope waveform at the exit portion becomes flat as shown in Fig.M18.
6. If the RF envelope appears like example "C" or "D" in Fig.M18 then adjustment of the tape guide post (P2:Entrance) is necessary.
7. Adjust the P2 post with the post adjustment screwdriver so that the RF envelope waveform at the entrance portion becomes flat as shown in Fig.M18.

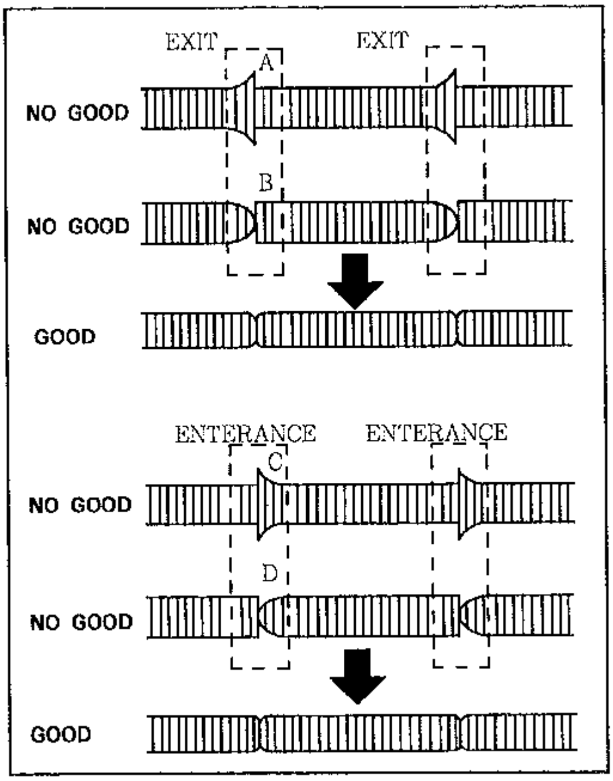

EXIT
A
EXIT
NO GOOD
B
NO GOOD
GOOD
ENTERANCE
C
ENTERANCE
NO GOOD
D
NO GOOD
GOOD

Fig.M18

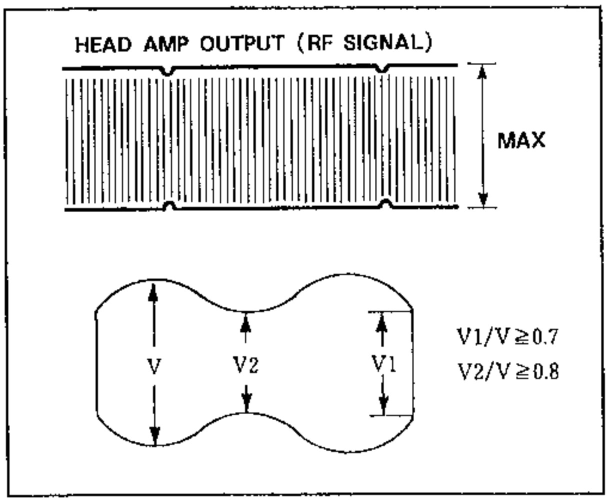

HEAD AMP OUTPUT (RF SIGNAL)
MAX
V
V2
V1
V1/V≥0.7
V2/V≥0.8

Fig.M19

3-3. Coarse Adjustment of A/C Head Height (1)

<NOTE>
This procedure should be performed only when the A/C Head is replaced.

1. Playback the normal tape.
2. Turn the 3 screws (A)(B)(C) mutually so that lower edge of tape running at lower edge of A/C Head and confirm a space as much as possible to flat between the A/C Head Unit and the A/C Head Base.

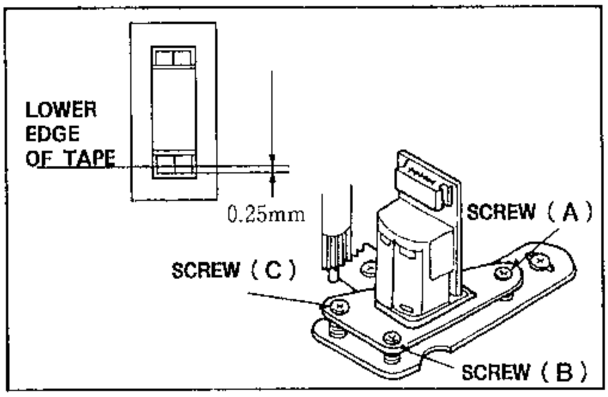

LOWER EDGE OF TAPE
0.25mm
SCREW (A)
SCREW (C)
SCREW (B)

Fig.M20

3-4. Coarse Adjustment of A/C Head Height (2)

1. Playback the normal tape.
2. Rotate the screw (A) as shown in Fig.M20 until the wrinkle appears on the lower edge of tape at P4 Post.
3. Rotate the screw (B) until the wrinkle just disappear on the lower edge of tape at P4 Post.

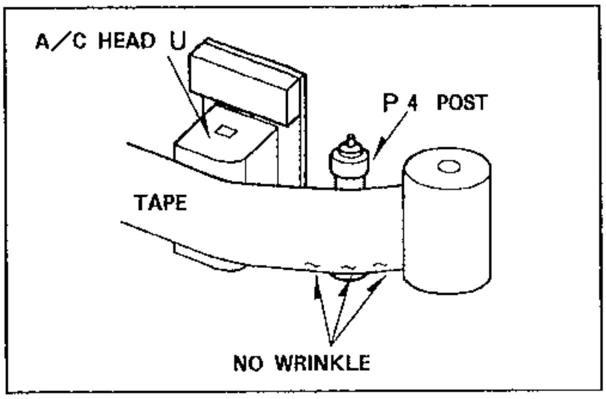


Fig.M21

3-5. Fine Adjustment of A/C Head Height

1. Connect the oscilloscope to the Audio output.
2. Playback the 2nd portion of the alignment tape.
3. Rotate the screw (C) so that audio signal becomes maximum.

<When moving the A/C Head up>

1. Rotate the screw (A) counter-clockwise until the wrinkle appears on the lower edge of tape at P4 Post.
2. Rotate the screw (B) counter-clockwise until just disappears on the lower edge of tape at P4 Post.
3. Rotate the screw (C) counter-clockwise until the audio signal is maximized.

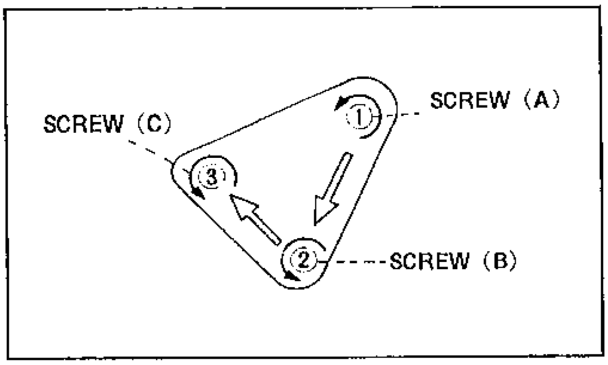


Fig.M22

<When moving the A/C Head down>

1. Rotate the screw (B) clockwise until the wrinkle appears on the lower edge of tape at P4 Post.
2. Rotate the screw (A) clockwise until the wrinkle just disappear on the lower edge of tape at P4 Post.
3. Rotate the screw (C) clockwise until the audio signal is maximized.

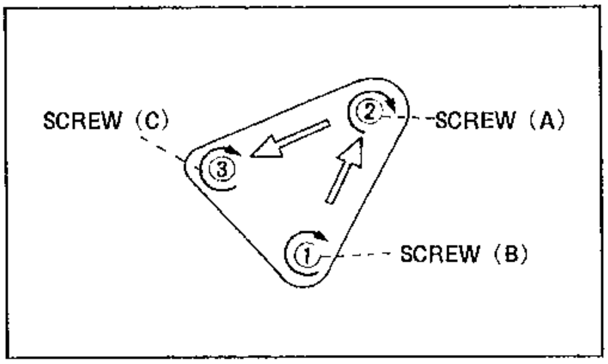


Fig.M23

3-6. Horizontal Position Adjustment of A/C Head.

<NOTE>

TEST POINT and JUMPER WIRE position, please refer to the MECHANICAL ADJUSTMENT INFORMATION which are shown in service manual for each model.

1. Set the tracking control into the center fix position by connect a jumper wire on the MAIN C.B.A.
2. Connect the oscilloscope to the Audio output, Video RF envelope on the Head Amp test point and head switching pulse on the Head Amp test point as for triggering.
3. Playback the 4th portion of the alignment tape.
4. Loosen the 2 screws (D)(E).
5. Adjust the A/C Head Base (F) so that the phase of audio drop-out and RF video drop-out becomes the same as possible. Fig.M24.
6. Playback the 2nd portion of the alignment tape.
7. Adjust the A/C Head Base (F) until the video RF signal is maximized.
8. Carefully tighten screw (D) with hold the A/C Head Base position with the Fine Adjustment Gear Driver then tighten screw (E).

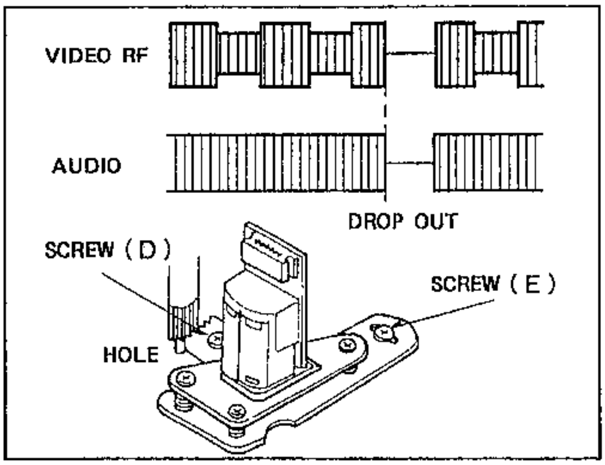

VIDEO RF
AUDIO
DROP OUT
SCREW (D)
SCREW (E)
HOLE

Fig.M24

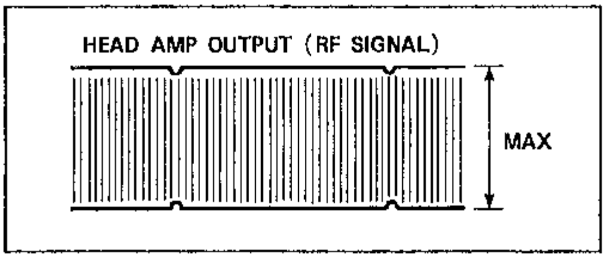

HEAD AMP OUTPUT (RF SIGNAL)
MAX

Fig.M25

3-7. Adjustment of Tension Post Position

1. Remove the Top Plate and Cassette Holder.
2. Turn the Loading Motor until the loading completes.
3. Adjust the hole of the Tension Band Unit by Hex wrench so that the left edge of the Impedance Roller and Tension Arm Unit as shown in Fig.M26.

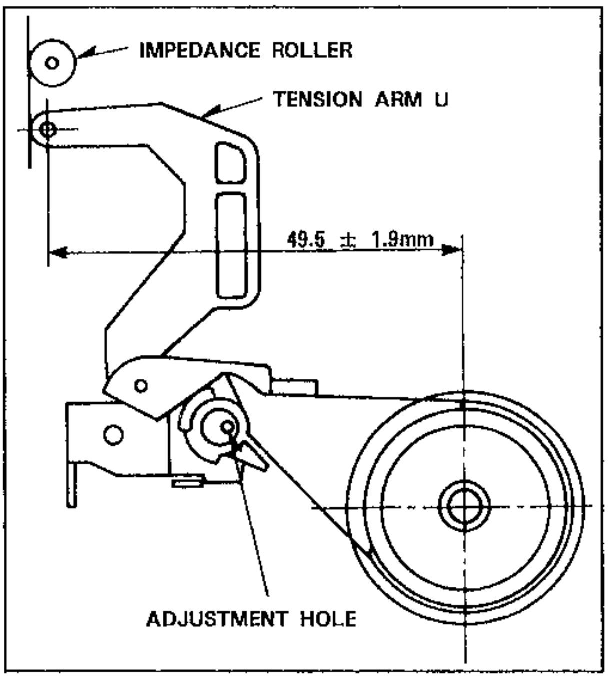

IMPEDANCE ROLLER
TENSION ARM U
49.5 ± 1.9mm
ADJUSTMENT HOLE

Fig.M26

3-8. Adjustment of Back Tension

1. Playback the cassette tape from the begging of tape and wait until tape movement has stabilized.
2. Insert the back tension meter into the path of the tape and confirm the back tension to be within specification as shown in Fig.M27.
3. If back tension is not in the specification, change the spring notch as shown in Fig.M28.

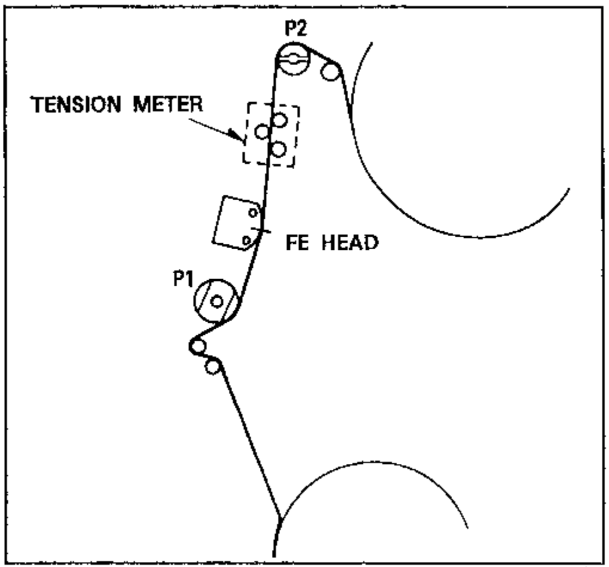

P2
TENSION METER
FE HEAD
P1

Fig.M27

<NOTE>
Specification of Back Tension, please refer to the MECHANICAL ADJUSTMENT INFORMATION which are shown in service manual for each model.

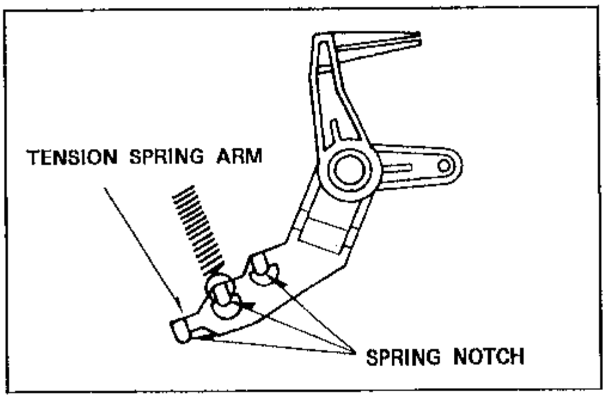

TENSION SPRING ARM
SPRING NOTCH

Fig.M28

3-9. Adjustment of Capstan Housing & Stator.

1. Install the Capstan Housing into the mechanical chassis and place the Capstan Stator into position.
2. Loosely tighten 3 screws (G).
3. Insert the Center Fixing Tool (VFK0851) as shown in Fig.M29.
4. Tighten 3 screws (G).
5. Remove the Center Fixing Tool.

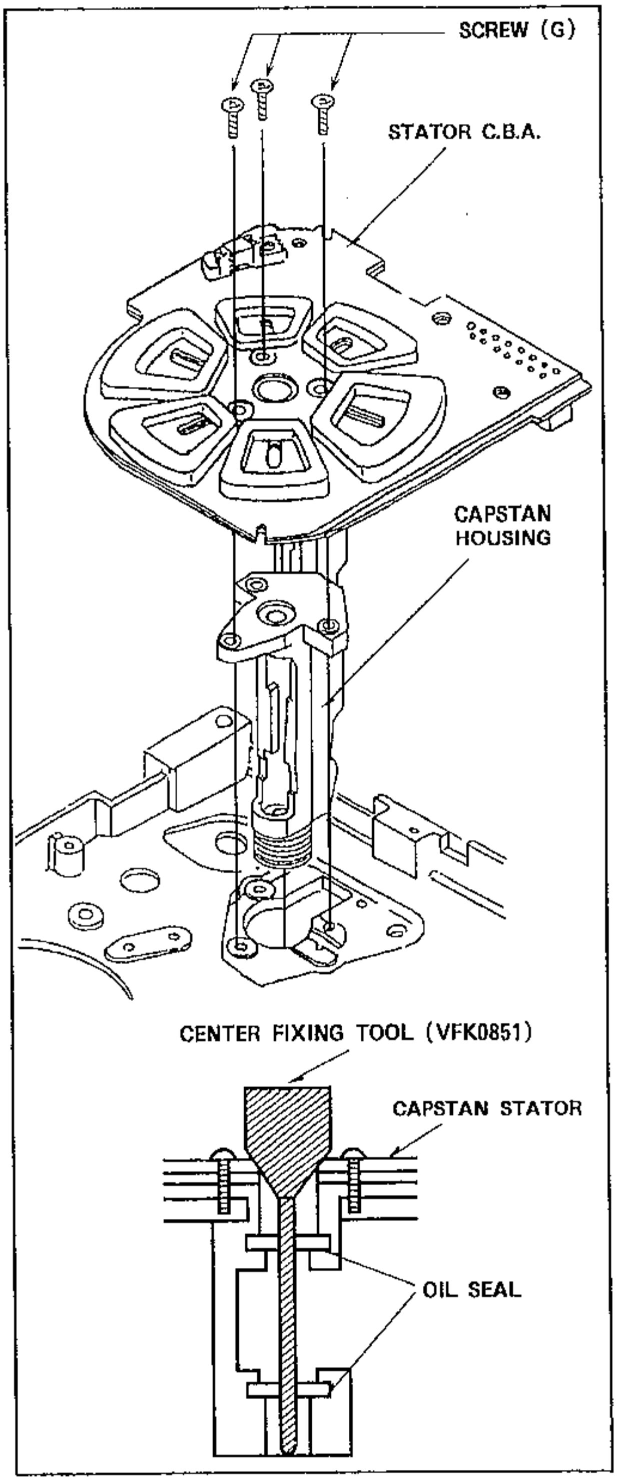

SCREW (G)
STATOR C.B.A.
CAPSTAN HOUSING
CENTER FIXING TOOL (VFK0851)
CAPSTAN STATOR
OIL SEAL

Fig.M29

3-10. Adjustment of Thrust Gap

1. Turn the Thrust Adjustment Screw clockwise to until the Capstan Rotor just separate from the Capstan Stator while rotating the Capstan Rotor by hand.
2. Turn the Thrust Adjustment Screw clockwise to 180 degrees from point at step 1.
3. Set the 2 Oil Seal to edge of the Capstan Housing as show in Fig.M30.

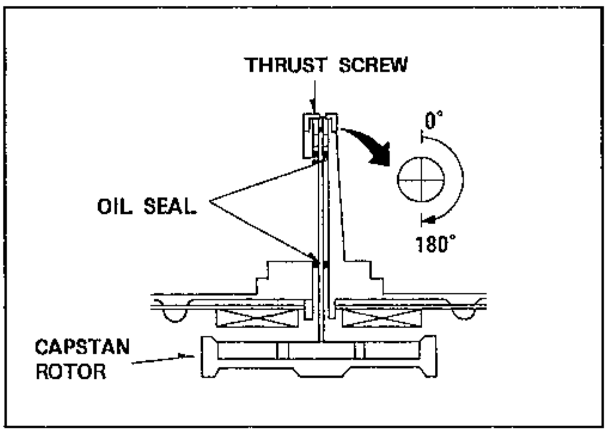


Fig.M30

3-11. Adjustment of FG GAP

1. Loosen screw (H) and set the Fine Adjustment Screw Driver in the hole on the Capstan Stator Unit.
2. Adjust the gap between FG Head and the Capstan Rotor.
3. After adjustment, tighten a screw (H).

<NOTE>
Specification of FG GAP, please refer to the MECHANICAL ADJUSTMENT INFORMATION which are shown in service manual for each model.

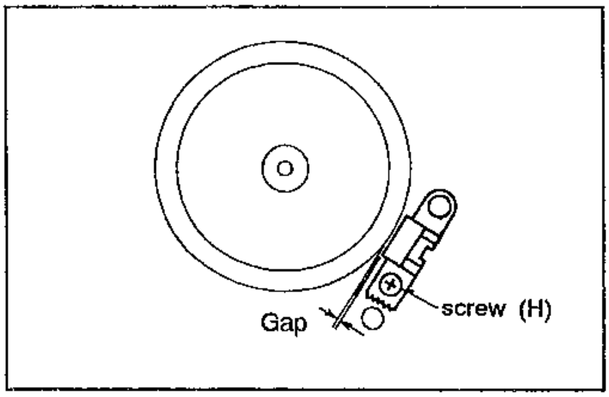


Fig.M31

3-12. Pressing Force Confirmation of the Pressure Roller

1. Playback the end portion of the 120 minutes tape.
2. Set the Fan type tension gauge to point (A) and push to direction indicated by the arrow (B) as shown in Fig.M32.
3. Confirm that reading of tension gauge is in specification at momentary stop the tape running.

<Note>
Specification of PRESSING FORCE, please refer to the MECHANICAL ADJUSTMENT INFORMATION which are shown in service manual for each model.

If the pressing force is not in specification, change the pressure spring.

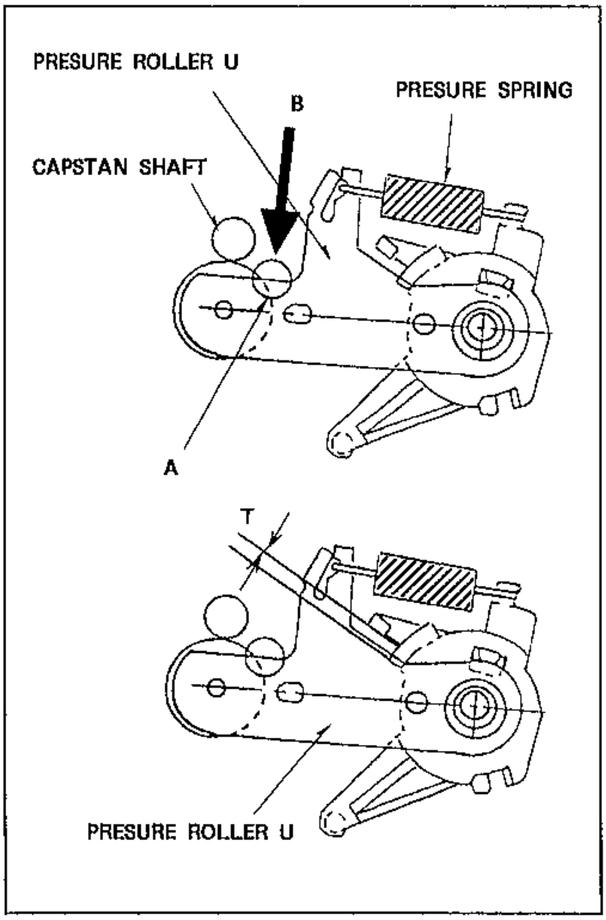


Fig.M32

SECTION 4
ASSEMBLY & PHASE ADJUSTMENT PROCEDURE

4-1. Assembly Procedures of Mechanism

The gear phase alignment is performed in the cassette down position and is crucial for the K-Mechanism to operate correctly.

1. Top view of gear phase alignment marks.
   There are alignment marks on the pinch cam gear and sub cam gear. there is one alignment mark on the carriage gear.

2. Bottom view of gear phase alignment marks.
   There are alignment marks on take-up loading gear and supply loading gear. There is an additional mark on the take-up loading gear that aligns with the mark on the main lever. There are alignment marks on the main cam gear and the sub cam gear. The mode switch gear mark aligns with a notch in the mode switch frame.

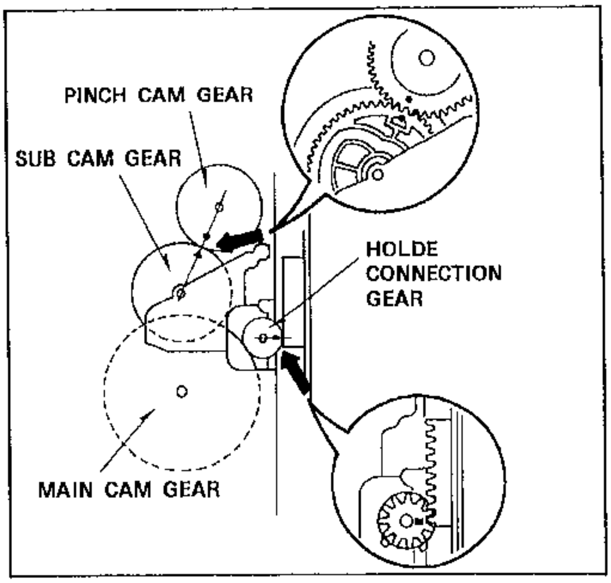
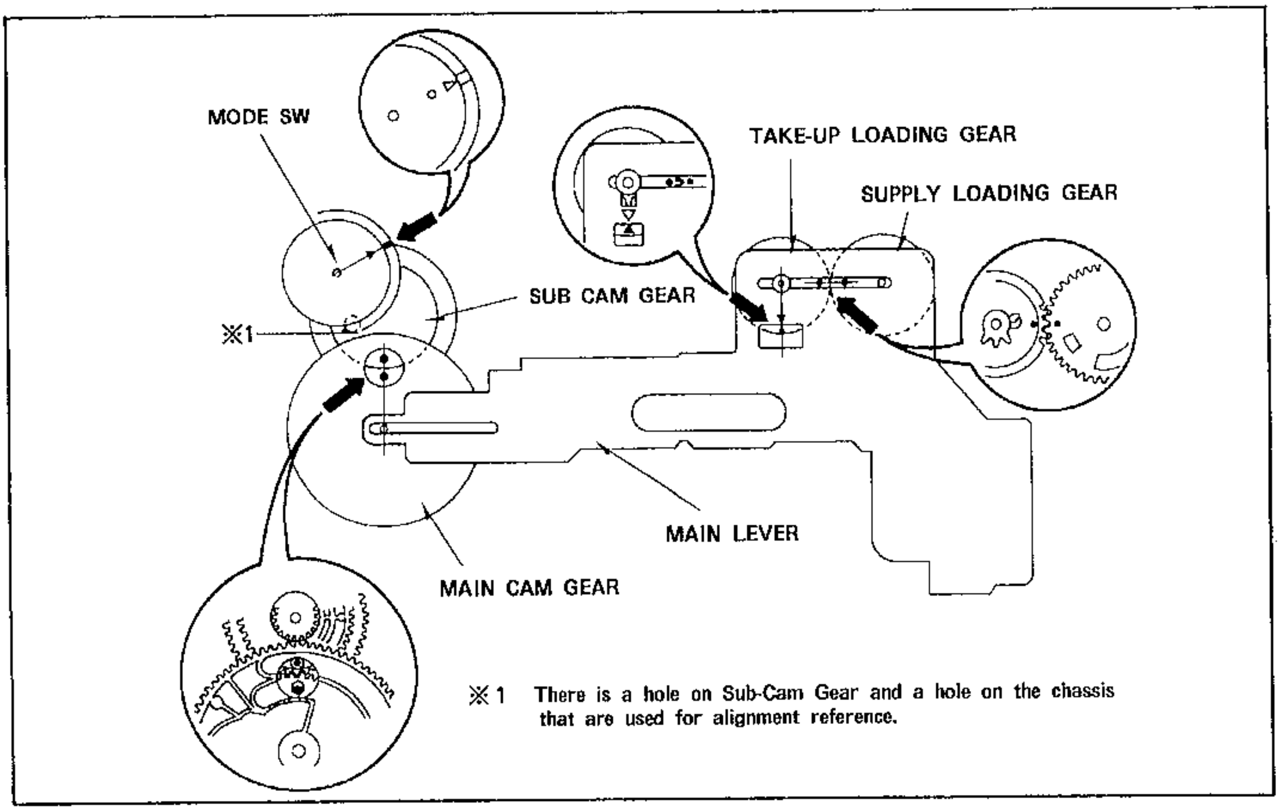

PINCH CAM GEAR
SUB CAM GEAR
HOLDE CONNECTION GEAR
MAIN CAM GEAR

Fig.M33


MODE SW
TAKE-UP LOADING GEAR
SUPPLY LOADING GEAR
SUB CAM GEAR
※1
MAIN LEVER
MAIN CAM GEAR

※1 There is a hole on Sub-Cam Gear and a hole on the chassis that are used for alignment reference.

Fig.M34

4-2. Assembly of parts on the Top Chassis

1. Install the Pinch Cam Gear onto shaft (A) and the P5 Arm Unit onto shaft (B).
2. Install the P5 Stopper Base with the cut washer (D) and screw (C).
3. Install the P5 Stopper on the P5 Stopper Base with latch (E).

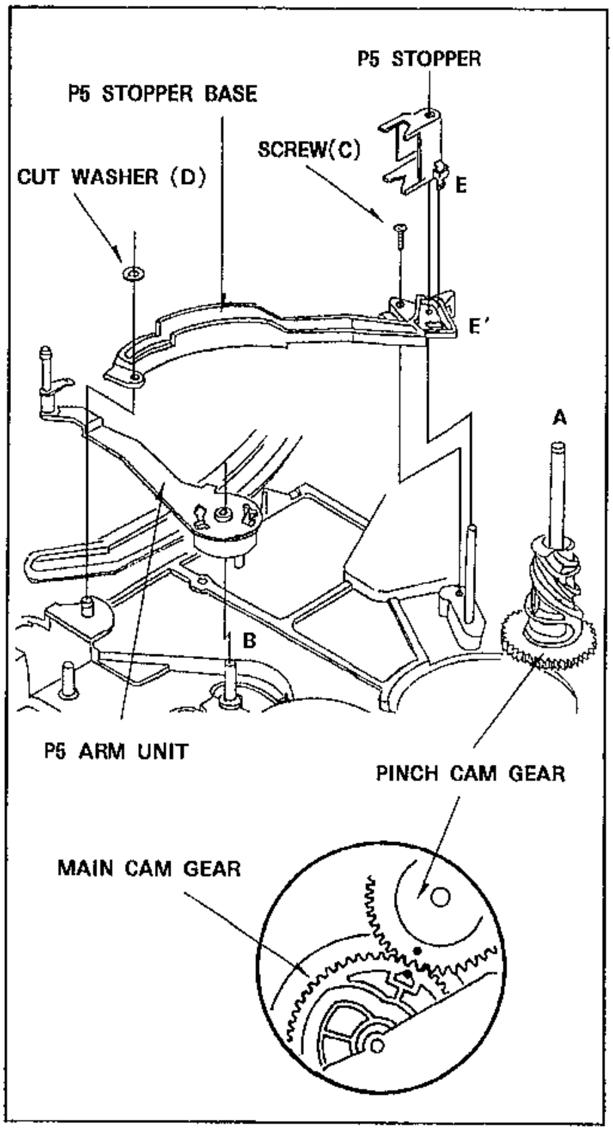

P5 STOPPER
P5 STOPPER BASE
SCREW(C)
CUT WASHER (D)
E
E'
A
B
P5 ARM UNIT
PINCH CAM GEAR
MAIN CAM GEAR

Fig.M35

4-3. Assembly of parts on the Bottom Chassis

1. Install the Idler Arm Unit onto shaft (F).
2. Install the Take-up and Supply Reel Gears onto shaft (G) and (H).
3. Install the Idler Regulator Level onto shaft (I) then install the Direct Lever.
4. Install the Center Clutch onto shaft (F) with the cut washer.

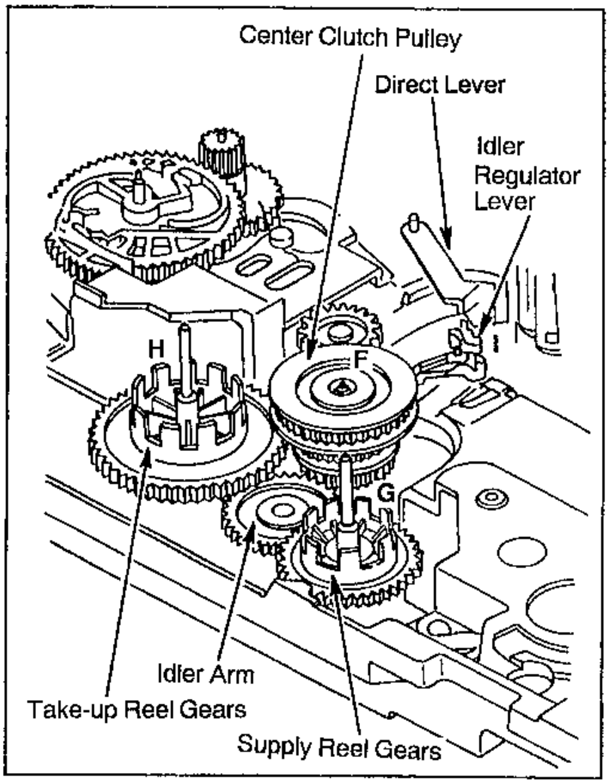

Center Clutch Pulley
Direct Lever
Idler
Regulator
Lever
H
F
I
G
Idler Arm
Take-up Reel Gears
Supply Reel Gears

Fig.M36

4-4. Assembly of Main Cam Gear and Sub Cam Gear

1. Install the Sub Cam Gear on to shaft (J) so that the chassis hole aligns with hole in the Sub Cam Gear.
2. Rotate the Holder Connection Gear to position of arrow mark as shown in Fig.M37.
3. Install the Main Cam Gear onto shaft (K) so that the hole of the Main Cam Gear aligns with the hole in the Sub Cam Gear. Also insert the boss of the Take-up Tension Regulator Arm into the slot on the Main Cam Gear.

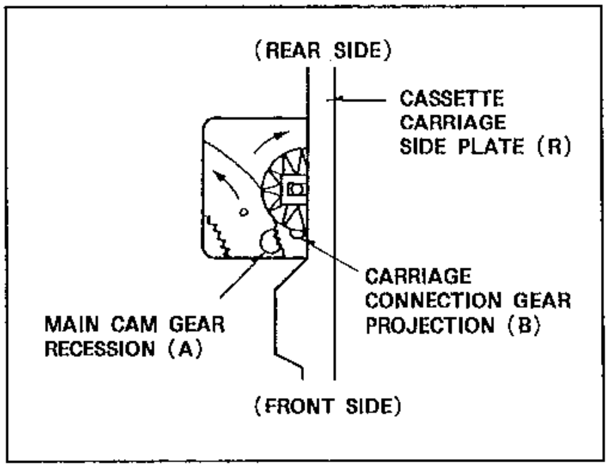

(REAR SIDE)
CASSETTE CARRIAGE SIDE PLATE (R)
CARRIAGE CONNECTION GEAR PROJECTION (B)
MAIN CAM GEAR RECESSION (A)
(FRONT SIDE)

Fig.M37

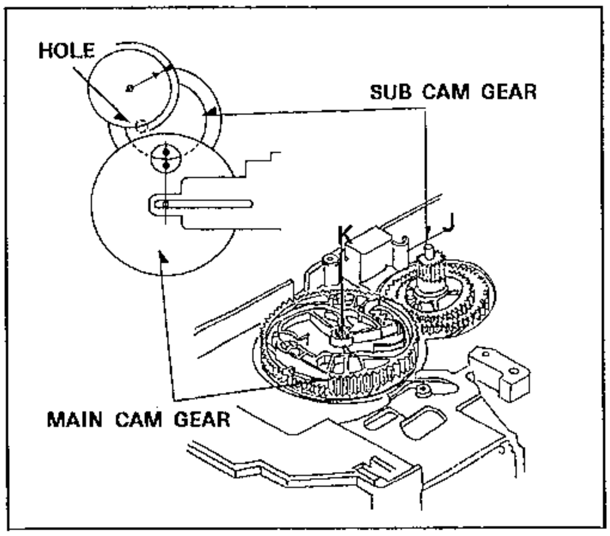

HOLE
SUB CAM GEAR
K
J
MAIN CAM GEAR

Fig.M38

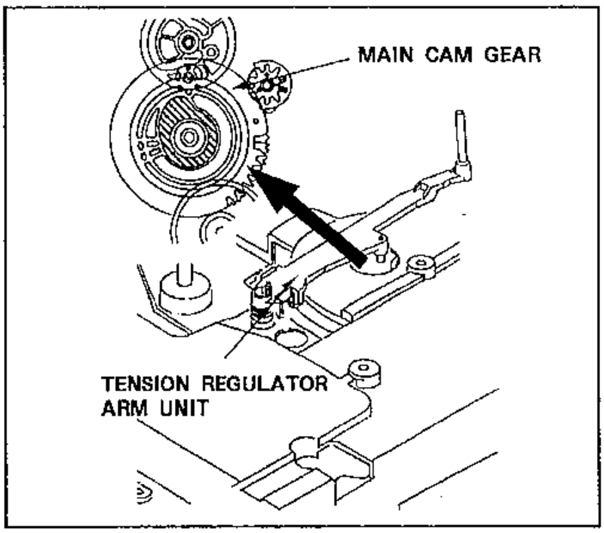

MAIN CAM GEAR
TENSION REGULATOR ARM UNIT

Fig.M39

4-5. Assembly of Mode Switch

1. Align a triangle mark on the Mode Switch Gear with the notch on the Mode Switch frame.
2. Confirm the Main and Sub Cam Gears aligned properly then install the Mode Switch with screw (L).

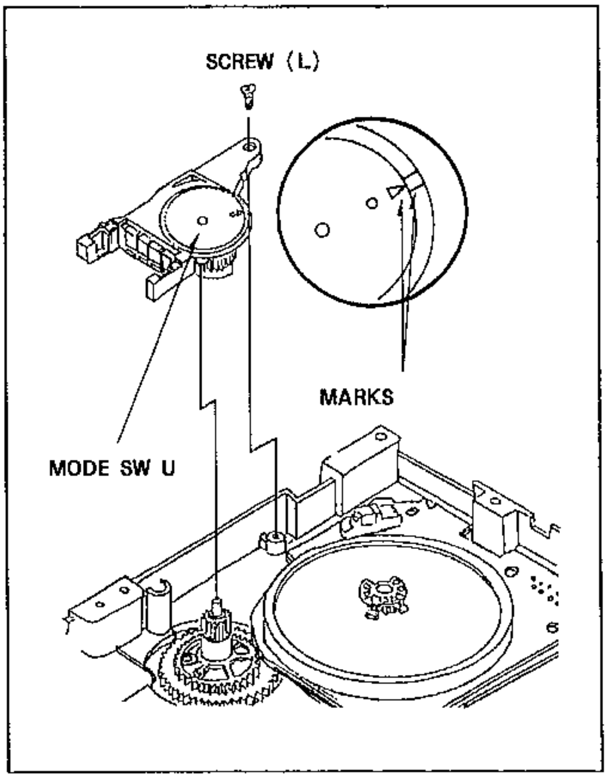

SCREW (L)
MARKS
MODE SW U

Fig.M40

4-6. Assembly of Take-up and Supply Loading Gears.

1. Install the Supply Loading Gear onto the shaft (S).
2. Install the Take-up Loading Gear onto the shaft (T) so that hole on the Take-up Loading Gear align with the hole on the Supply Loading Gear.
3. Install the Supply Loading Arm onto shaft of the Supply Inclined Base with washer.
4. Insert the Take-up Loading Arm onto shaft of the Take-up Inclined Base with washer.

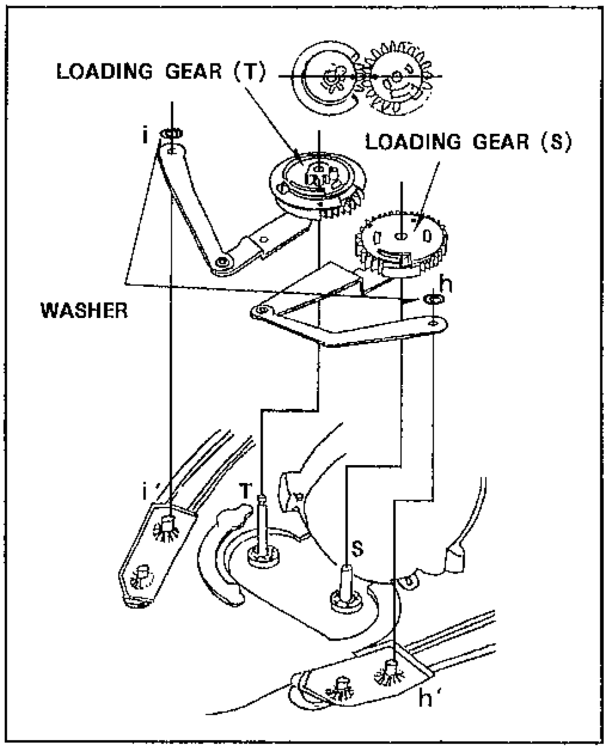

LOADING GEAR (T)
LOADING GEAR (S)
i
WASHER
h
i'
T
S
h'

Fig.M41

4-7. Assembly of Main Lever

1. Install the Main Lever Arm checking that the boss of arms and shafts are in correct position and mark on the Main Lever Arm is aligned with mark on the Take-up Loading Gear.
2. Insert the 2 cut washer as shown in Fig.M42.

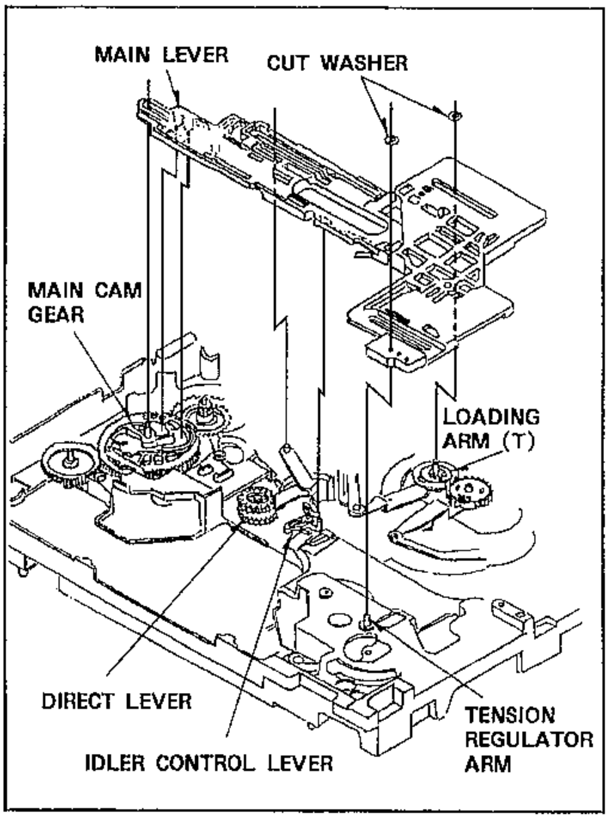

MAIN LEVER
CUT WASHER
MAIN CAM GEAR
LOADING ARM (T)
DIRECT LEVER
IDLER CONTROL LEVER
TENSION REGULATOR ARM

Fig.M42

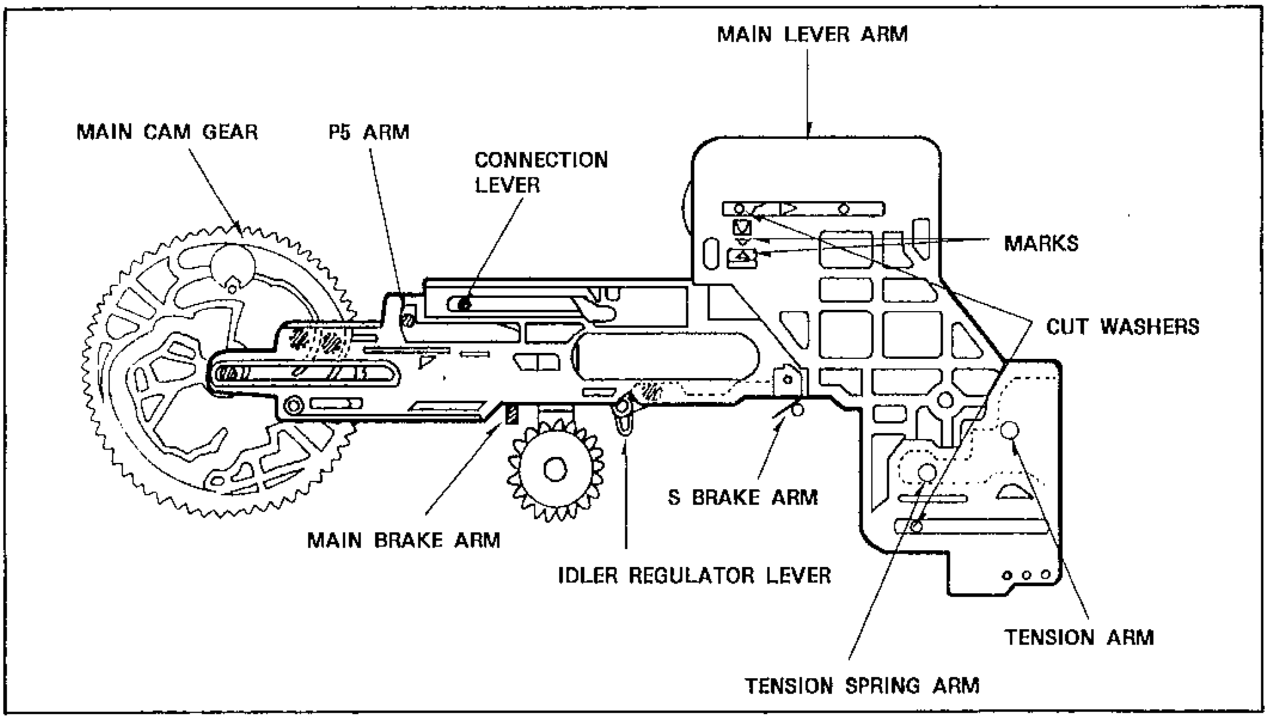

MAIN LEVER ARM
MAIN CAM GEAR
P5 ARM
CONNECTION LEVER
MARKS
CUT WASHERS
S BRAKE ARM
MAIN BRAKE ARM
IDLER REGULATOR LEVER
TENSION ARM
TENSION SPRING ARM

Fig.M43

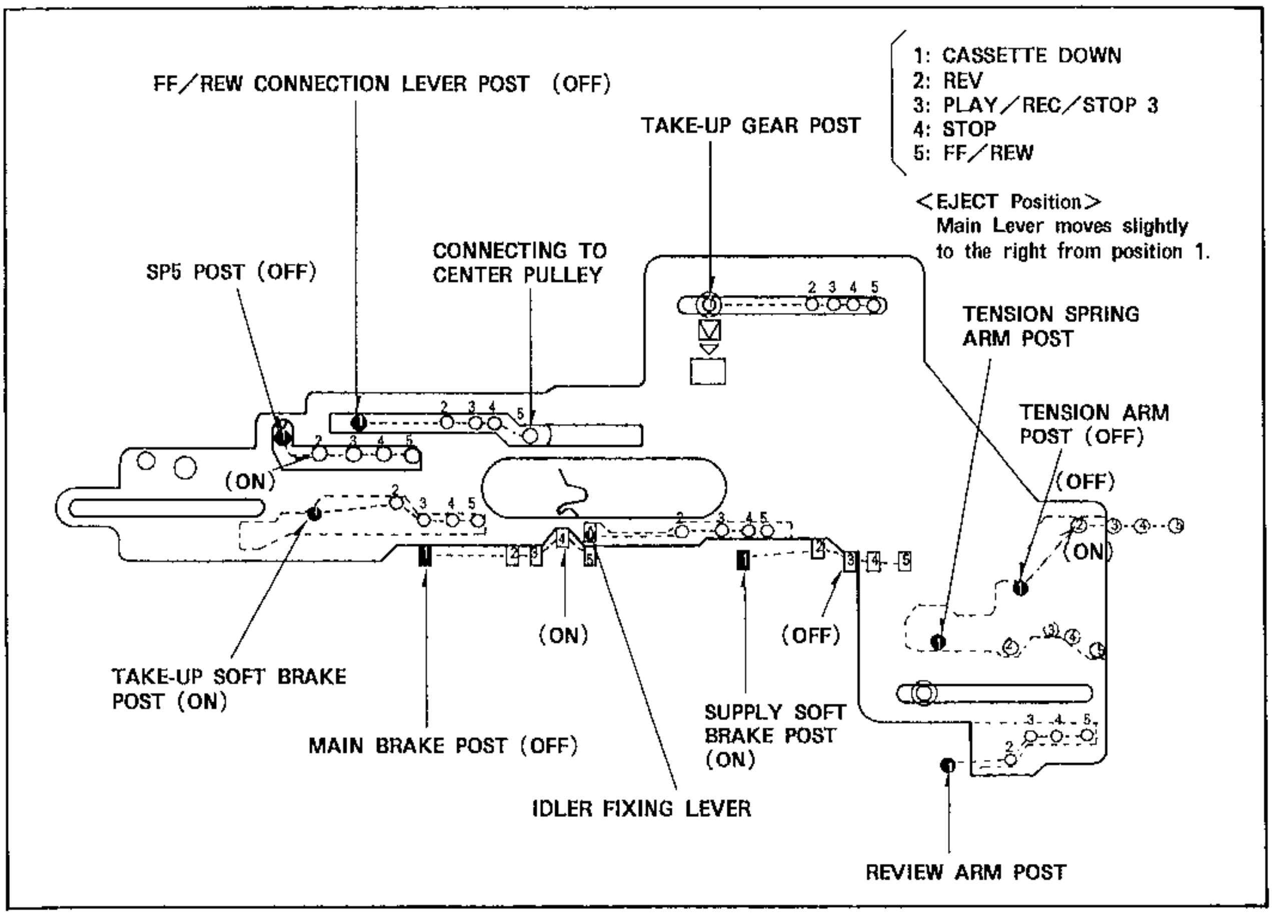

1: CASSETTE DOWN
2: REV
3: PLAY/REC/STOP 3
4: STOP
5: FF/REW
<EJECT Position>
Main Lever moves slightly
to the right from position 1.
FF/REW CONNECTION LEVER POST (OFF)
TAKE-UP GEAR POST
SP5 POST (OFF)
CONNECTING TO CENTER PULLEY
TENSION SPRING ARM POST
TENSION ARM POST (OFF)
(OFF)
(ON)
(ON)
(ON)
(OFF)
TAKE-UP SOFT BRAKE POST (ON)
MAIN BRAKE POST (OFF)
SUPPLY SOFT BRAKE POST (ON)
IDLER FIXING LEVER
REVIEW ARM POST
2
3
4
5

Fig.M44

4-8. Reinstall of the Cassette Compartment

1. Push the locking tabs to direction as shown in Fig.M45 and remove the Top Plate.

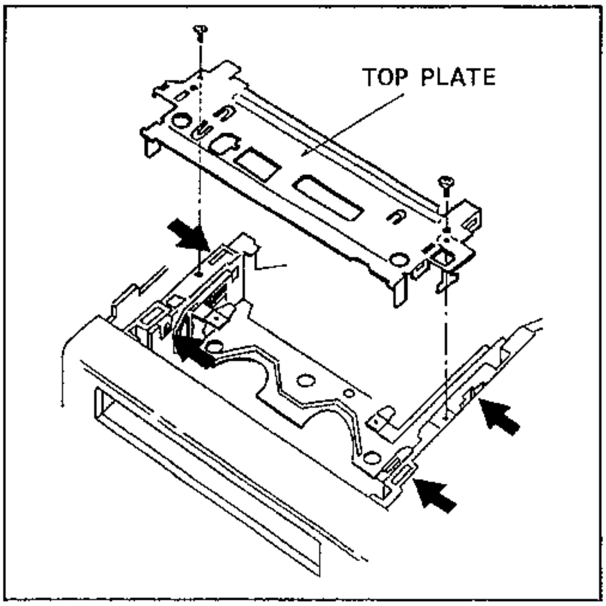


Fig.M45

2. Lift up the Cassette Holder Unit as shown in Fig.M46.

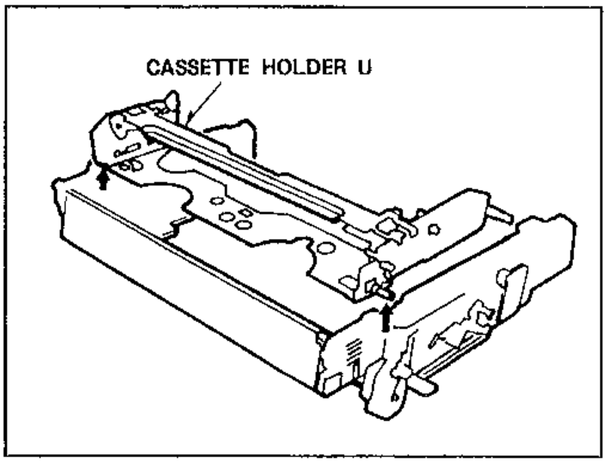

CASSETTE HOLDER U

Fig.M46

3. Press the Wiper Arm to direction indicated by arrow mark so that the Wiper Arm comes to cassette down position completely as shown in Fig.M48. Confirm a triangle mark on the Wiper Arm aligns with the mark on the Rack (B) Unit.

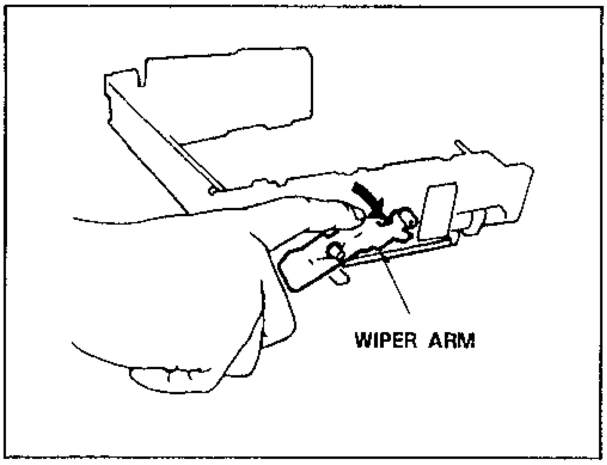


Fig.M47

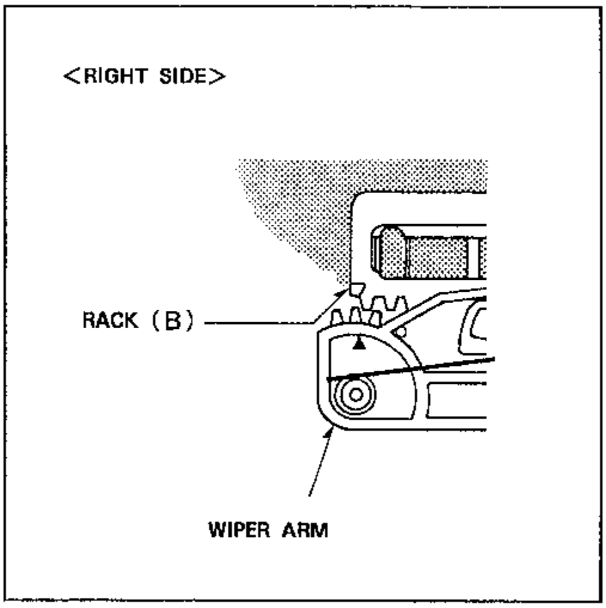

<RIGHT SIDE>
RACK (B)
WIPER ARM

Fig.M48

4. Install the cassette compartment (without cassette holder) to the mechanical chassis so that mark on the Holder Connection Gear should line up with first tooth of the Rack Gear as shown in Fig.M49.

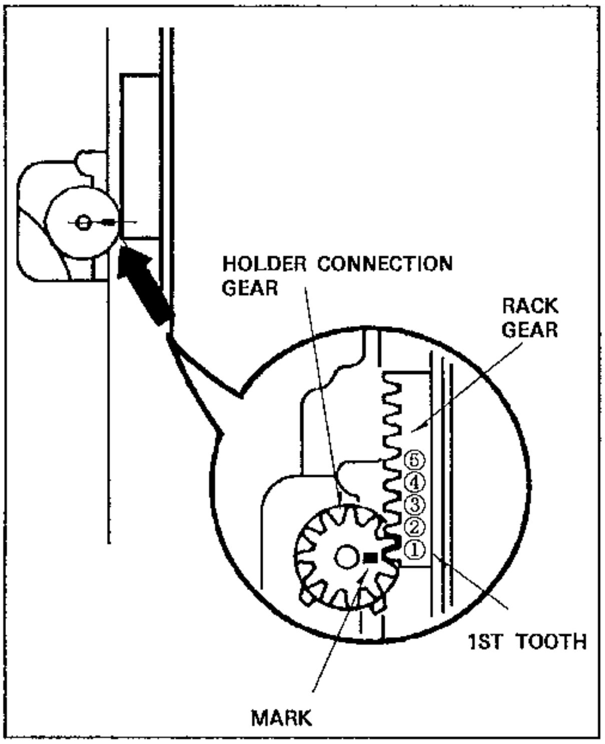

HOLDER CONNECTION GEAR
RACK GEAR
⑤
④
③
②
①
1ST TOOTH
MARK

Fig.M49

5. Tighten 4 screws as shown in Fig.M50.
6. Manually move the loading mechanism toward the EJECT position by turn the Loading Motor and stop just before completion, so that the Wiper Arm straight up.
7. Install the Cassette Holder Unit in the Cassette Compartment Base as shown in Fig.M51.
8. Install the Top Plate on the Cassette Compartment Base.
9. Manually confirm that front loading and main loading run smoothly.

<NOTE>

For proper front loading, the guide pin on the opener lever should follow the upper track of the right side panel as shown in Fig.M52.

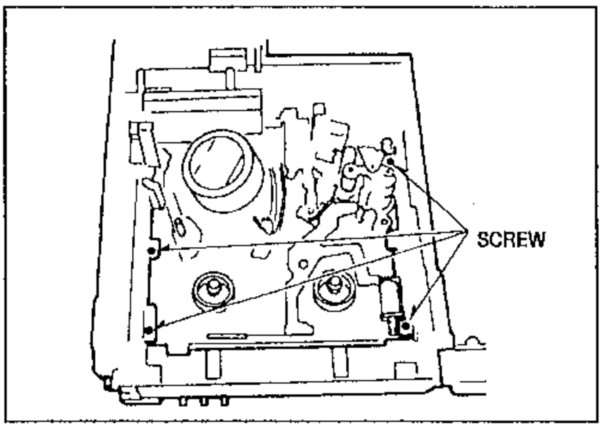
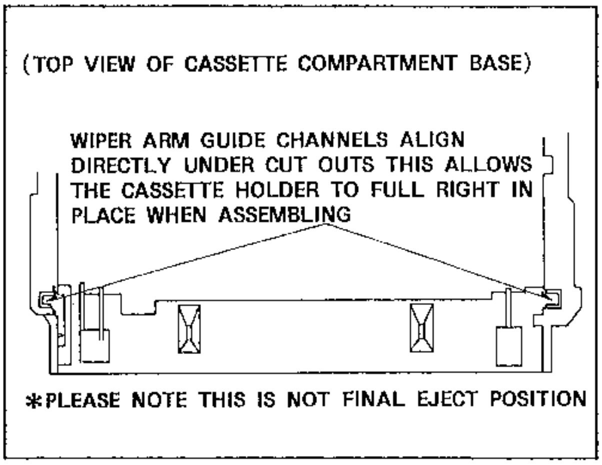


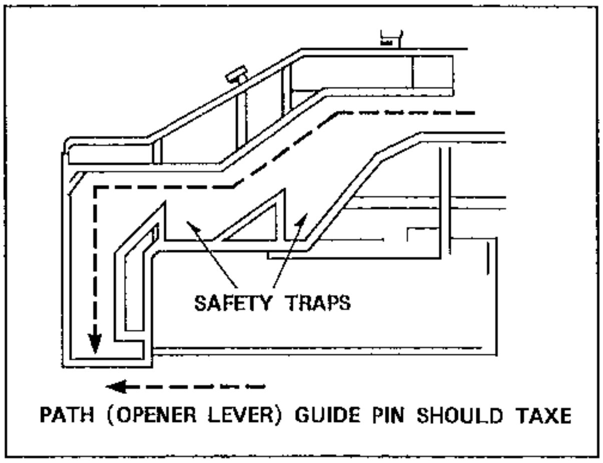
Fig.M50


(TOP VIEW OF CASSETTE COMPARTMENT BASE)

WIPER ARM GUIDE CHANNELS ALIGN DIRECTLY UNDER CUT OUTS THIS ALLOWS THE CASSETTE HOLDER TO FULL RIGHT IN PLACE WHEN ASSEMBLING

*PLEASE NOTE THIS IS NOT FINAL EJECT POSITION

Fig.M51


SAFETY TRAPS

PATH (OPENER LEVER) GUIDE PIN SHOULD TAXE

Fig.M52